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ADDITIONAL 16TH CENTURY BIRD REPORTS FROM FLORIDA

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Abstract.—Several previously unrecognized reports and records from 16th-century Florida have revealed the presence of birds in the state at that time. The Spanish explorers de Vaca in 1528 and de Soto in 1539 reported in general terms waterfowl, hawks, partridges, and sparrows. Mallards and probably Northern Bobwhites by de Vaca and Wild Turkeys by de Soto probably constitute the earliest known reports of these birds in eastern North America. The French explorers, Ribaut and Laudonnière in 1562-65 accounted for bitterns, egrets, and cormorants, as well as the first report of the Carolina Parakeet. These Spanish and French explorers and occupants of 16th-century Florida thus left reports indicating a large diversity of bird life including waterfowl, cranes, hawks, shorebirds, quail, turkeys, and a few passerines. The accounts summarized here emphasize the need for further research into other explorers' reports to discover additional historical records of birds in Florida.

Little has been published about the early history of birds in Florida. The only report for the 16th century thus far published in the ornithological literature was that of Jean Ribaut (also known as Ribaud and Ribault) at Mayport, which first appeared in Howell's (1932) *Florida Bird Life*. In the course of library research into the history of Virginia's ornithology, I found several additional references to French and Spanish explorers in Florida who left written records of their movements, observations of people, the environment, and natural history. Those reports are presented here to improve our understanding of Florida's early bird life.

Before examining the reports in detail, I emphasize that most birds seen by these explorers in North America were new to them, and the names they applied reflected experiences with similar species they had seen in their native countries or on other expeditions. De Vaca, for example, wrote of birds "like those of Spain." Thus, their vernacular names may or may not have been accurately applied to the new birds seen, as spelled out below.

Historical Accounts

The Spaniard, Ponce de Leon (1460?-1521), is credited with discovering Florida in 1513 after he had sailed from the West Indies. He skirted the Florida coast seeking a suitable bay, and finally anchored in a harbor near St. Augustine on or about 2 April 1513. He then sailed south to the Florida Keys in May, and up the west coast as far as the area of Sanibel Island. He returned to Cuba via the Dry Tortugas on 26 June. Unfortunately none of the accounts of his explorations contains mention of bird life (Lawson 1946).

Alvar Nuñez Cabeça de Vaca, another Spanish explorer, arrived in Florida with the Narváez expedition on 14 April 1528, and anchored near shore in the mouth of a bay (about St. Clement's Point, on the peninsula west of Tampa Bay) (Brebner 1955). Toward the end of June, de Vaca and his party traveled overland and north to a lake shore (probably on Miccosukee Lake) "to this town region of Apalachen", where he described cedars, evergreen oaks, pines, and "palmitos like those of Spain." De Vaca's reference to "Large lakes" was probably to the lake country in the northern part of Leon and Jefferson counties. He went on to report "Deer of three kinds, rabbits, hares, bears, lions and other wild beasts. . . . Animal with a pocket on its belly. . . . Birds are of various kinds. Geese in great numbers. Ducks, mallards, royal-ducks, fly-catchers, night-herons and partridges abound. We saw many falcons, gerfalcons, sparrow-hawks, merlins, and numerous other fowl" (Hodge 1907:29-31).

Most of de Vaca's bird names are either very general (geese, ducks, fly-catchers) or suggest a careful evaluation here. For example, his "royal-duck" is a faulty translation of the Spanish "pato real," meaning the "real duck, the true one," i.e. the Mallard (*Anas platyrhynchos*) (Michel Desfayes, pers. comm.). "Partridges" were probably Northern Bobwhites (*Colinus virginianus*), but the hawk names could have applied to any of several species of North American accipiters, buteos, or falcons, although probably not the Gyrfalcon (*Falco rusticolus*). Even so, de Vaca's list of birds from Florida in 1528 is important in the historical annals of American ornithology because it is *the first known list of birds from continental North America* (Allen 1951; Johnston 2002). It also contains the first mention of Mallards and probably Northern Bobwhites in the New World.

Another Spanish explorer in the 16th century, Hernando de Soto (1500-1542) left Spain on 7 April 1538, and by way of Cuba landed at Tampa Bay on 25 May 1539. Traveling overland to the north, he reached Apalachen near the modern city of Tallahassee on 6 October 1539. He remained there over winter, leaving on 3 March 1540 to continue his travels through Alabama, Georgia, and ultimately west across the Mississippi River to Texas and Mexico (Shipp 1881). Haklvyt's (1609:181-182) work contains a narrative, "The discouerie of Florida, next adioyning to Vir-

ginia" of Soto, first written in Portuguese by Elvas the chronicler of the expedition and presumably translated from the Portuguese by Hakluyt. It reads that in Florida "there be many wild Hennes as big as Turkies, Partridges small like those of Africa, Cranes, Duckes, Pigeons, Thrushes, and Sparrowes. There are certaine Blacke birds bigger then Sparrows, and lesser then Stares. There are Gosse Hawkes, Falcons, Jerfalcons, and all Fowles of prey that are in Spaine" *This Florida report of "pigeons" in 1539, very likely the Passenger Pigeon (Ectopistes migratorius), is the earliest known report of that species in what is now the United States* (Jacques Cartier had reported pigeons in Canada in 1534, Schorger 1955).

Two other translations are slightly but importantly different from that of Haklvyt (above) read: "There are . . . in Florida . . . numerous wild fowl, as large as pea-fowl; small partridges, like those of Africa, and cranes, ducks, pigeons, thrushes, and sparrows. There are blackbirds larger than sparrows and smaller than stares; hawks, goshawks, falcons, and all the birds of rapine to be found in Spain." (Lewis 1907:271-272). And: "There be many Wild-hennes as bigge as Peacocks, small Partridges like those of Africa, Cranes, Ducks, Rolas, Blackbirds, and Sparrowes. There be certeine Blacke birds bigger than Sparrowes and lesser than Stares. There be Sore-hauks, Faulcons, Gosse-hauks, and all fowles of pray that are in Spaine" (de Soto 1602:38).

From these translations we can suggest the following concerning de Soto's birds. The "wild fowl [or Hennes] as large as pea-fowl" were most certainly Wild Turkeys (*Meleagris gallopavo*) and "pigeons" must have been Passenger Pigeons. The change from "pigeons" to "Rolas" by Brereton is curious because "Rola" is the European Turtle-Dove (*Streptopelia turtur*), which would most closely resemble the American Mourning Dove (*Zenaida macroura*) (Desfayes 1998). "Sore-hauk" is a falconer's term for a young hawk meaning "reddish hawk," "Gosse-hauk" originally referred to the Buzzard (*Buteo buteo*) and might have been used by de Soto for any of the American buteos. The comparative "Stares" are European Starlings (*Sturnus vulgaris*) (Michel Desfayes 1998 and pers. comm.). De Soto was probably the first writer to mention the Wild Turkey in eastern North America.

The reports of these early 16th century Spanish explorers indicate a variety of birds in Florida at the time, from large and conspicuous geese and hawks to flycatchers. It is interesting to note the lack of any adjectives suggesting abundance of the bird life, but this might have been lost in the translations.

French explorations to northeastern Florida in the 1560s have been described in the accounts of Jean Ribault or Ribaut (1520-1565), René Goulaine de Laudonnière (1533-?), Nicolas Le Challeux, and Jacques Le Moyne de Morgues (1533-1588). Admiral Gaspard de Coligny in 1562 chose Jean Ribaut to command the first French expedition to the east

coast of Florida, Georgia, and South Carolina. His lieutenant was René Goulaine de Laudonnière, the future commander of Fort Caroline. On 30 April 1562, they reached the coast of Florida (29°30'N), which Ribaut named French Cape, a few miles below Matanzas Inlet. On 1 May, they arrived at the entrance of a large river, which they called the River of May (now the St. John's) and took possession of the land for the French. The Ribaut party spent two days near the present town of Mayport, then sailed north on the coast, naming all the rivers after those in France—Seine (= St. Marys), Somme (= St. Andrews Sound), Loire (= St. Simons Sound). He reached Port Royal at the mouth of the Broad River in South Carolina where he built Charlesfort on the present-day Parris Island, then, on 10 June 1562, Ribaut returned to France with Laudonnière.

In May 1563 Ribaut published in London an English version (translated from French) of his first Florida expedition (Ribauld 1563). Quoting Ribaut's account of birds observed from a manuscript copy in the British Museum, Connor reported: "And the sight of the faire medowes is a pleasure not able to be expressed with tonge, full of herons, corleux, bitters, mallardes, egertes, woodkockes, and of all other kinde of smale birdes . . ." (Connor 1927:72). This is the same quotation used by Howell (1932). The original 1563 edition was similar: "And the syght of the fayre Medowes is a pleasure not able to be expressed wt tongue: full of Hernes, Curlues, Bitters, Mallardes, Egrepths, Wodkockes, & all other kynde of small byrdes . . ." (Ribauld 1563:4-5).

Of Ribaut's Florida observations in 1562-63, only the Mallard and probably the American Bittern (*Botaurus lentiginosus*) can be identified specifically with any certainty. "Corleux" or "curlues" could have been any birds with down-curved bills, and "egertes" (egrets) and "woodkockes" might have referred to any of several species.

Upon his return to England Ribaut was imprisoned, so the French named René de Laudonnière as commander of their second expedition to Florida. On 22 June 1564, Laudonnière arrived off the Florida coast near St. Augustine, and remained at Fort Caroline through the following summer. He described the Indians' custom of planting crops and then living off game in the woods until the crops matured. He also reported birds seen there: "The Fowles are Turkie Cocks, Partridges, Perrots, Pigeons, Ringdoves, Turtles, Blacke birds, Crowes, Tarcels, Faulcons, Leonards, Herons, Cranes, Storkes, wild Geese, Mallards, Cormorants, Herneshawes, white, red, blacke, and gray, and an infinit sort of all wildfoule" (Laudonnière 1602:40).

A different ("new") translation of the report on birds reads: ". . . turkeys, partridges, parrots, pigeons, woodpigeons, turtledoves, blackbirds, crows, hawks, falcons, lanners, herons, cranes, storks, wild geese, ducks, cormorants, white, red, black and grey egrets, and a vast number of another kind of waterfowl" (Lawson 1992:5).

Some birds in this report can be specifically identified: Wild Turkey, Carolina Parakeet (*Conuropsis carolinensis*), and a cormorant (*Phalacrocorax* probably *auritus*). *This report contains the first known reference to the Carolina Parakeet in the published literature.* "Ringdoves" are Wood Pigeons probably the same as his "pigeons" = Passenger Pigeons, "Leonard" is a dialectal variant of linnet, and "herneshawes" are herons (M. Desfayes, pers. comm.). Other bird names are too general for specific identification.

Nicolas Le Challeux, a carpenter who accompanied Capt. Ribaut on his last voyage to Florida in 1565, wrote a book (LeChalleux 1566) about the hardships of the French forces as they attempted to escape decimation by the Spaniards at Fort Caroline. In that book he described impenetrable forests, treacherous marshes, and wide rivers, as well as 12-ft. crocodiles, winged serpents, and the savages who wore "feathers of birds, which are of various colors" (Lorant 1946:94).

In 1565 Ribaut was released from prison and went back to France. He was put in command of a fleet to take provisions to Fort Caroline, then known as New France, arriving there in August. The Spanish, aware of the French encroachments on Florida, sent warships and soldiers to the region, captured Fort Caroline and Charlesfort in South Carolina, and massacred the remaining French including Ribaut.

Andre Thevet or Theuet (1504?-1592), the Royal Cosmographer of France, made several 16th-century voyages to the New World from which he published three papers (Thevet 1557, 1575, 1588). On his return trip from Brazil to France in 1556, Thevet claimed that the trip took him past Haiti, Cuba, Florida, and "very close to Canada." Presumably from Fort Caroline on the St. John's River, Thevet wrote that "the commonest animals of this land are stags, hinds, . . . wild dogs, turkeys, partridges, . . . parrots, wood-pigeons, turtledoves, blackbirds, crows, tercels, falcons, lanners, herons, cranes, storks, wild geese, ducks, cormorants, egrets of divers colors, and an infinity of kinds of game" (Schlesinger and Stabler 1986:139-140).

This list is remarkably similar to that of Laudonnière (1602) obtained in 1564-65:

Laudonnièrre (1602)	Thevet (1575)
turkeys, partridges, parrots, pigeons, woodpigeons, turtledoves, blackbirds, crows, hawks, falcons, lanners, herons, cranes, storks, wild geese, ducks, cormorants, white, red, black and grey egrets, and a vast number of another kind of waterfowl.	turkeys, partridges, parrots, wood-pigeons, turtledoves, blackbirds, crows, tercels, falcons, lanners, herons, cranes, storks, wild geese, ducks, cormorants, egrets of divers colors, and an infinity of kinds of game.

Because Laudonnière's work was not published until 1586, scholars now believe that "Thevet possessed Laudonnière's narrative, which he suppressed in order to pose as an authority on Florida" (Schlesinger and Stabler 1986). It is obvious that Thevet plagiarized the report of Laudonnière, and probably he was never in Florida.

The first known illustrator of natural history in North America was the Frenchman, Jacques Le Moyne de Morgues (1533-1588) who, as the "recording artist," accompanied the Laudonnière expedition to the northeast coast of Florida in 1564-65 (Alexander 1976). While there, he described activities of the French, relationships with the Indians, explorations along the River of May, and fate of the expedition at the hands of the Spaniards in 1565. He noted the trade of hatchets, knives, and mirrors with the local Indians for fish, venison, turkeys, and bear-cubs. This information has been included in Le Moyne's "Narrative" (Hulton 1977a:119-138). Therein Le Moyne quoted excerpts from the history of Florida and compiled by Laudonnière: "For seven weeks at this time pigeons were flying about in such great numbers that every day we killed with the arquebus more than two hundred in the woods surrounding our fort" (Hulton 1977a:129).

Le Moyne also prepared sketches from the expedition, which were completed as water colors later in London. Theodore de Bry, the skillful engraver, purchased Le Moyne's plates in 1585 and published 42 of them in 1591 (de Bry 1591, Hulton 1977b). These depicted Fort Caroline, Indian life, and "crocodiles," but only one contained birds, namely, Wild Turkeys at Port Royal, South Carolina (incidentally, the first known illustration of a North American bird, Johnston in press). While living in London, Le Moyne painted flowers and several birds from the English countryside, but no more North American species (Le Moyne 1586).

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REVIEW

Field Guide to the Birds of Cuba.—Orlando H. Garrido and Arturo Kirkconnell. 2000. Cornell University Press, Ithaca, New York. 251 pages. $59.95 cloth. ISBN 0-8014-3718-0, $29.95 paper. ISBN 0-8014-8631-9.—This much-anticipated book, written by Cuba's two leading field ornithologists, was motivated in part by that nation's long period of informational isolation. Its primary focus is to encourage the Cuban people, as well as visitors to their island, to know, enjoy, and conserve Cuba's diverse and often unique avifauna. Unbound by geopolitics, North American migrants regularly visit Cuba and some Cuban endemics occasionally venture across the Florida Straits from Cuba. Florida's ornithologists and birders largely have been able only to dream of learning more about those species in their native range. Now those dreamers may at least become voyeurs.

In format, *Field Guide to the Birds of Cuba* reminds me most of mid-twentieth-century eastern North American field guides by authors such as Roger Tory Peterson and Richard H. Pough. It covers all 362 species of birds reported in Cuba through early 1999, no matter how rare or uncertain, and illustrates nearly all of them. The 51 plates by Román N. Compañy, with opposite naming pages, are grouped together separately from the text. Species accounts average about half a page in length. Each account provides a description, a discussion of similar species, the species' range both in Cuba and worldwide, its Cuban status in terms of season and abundance, its habitat, voice, food preferences, and the plate number upon which it is illustrated. For the 142 native breeding species, a Cuban range map and a summary of nesting details also are provided. A succinct but informative introduction gives much helpful information about Cuba and its environment, including maps showing its vegetative zones and its major political and topographic features. The little-known theory of an early-Miocene "Gaarlandia," which is offered to explain some of Cuba's geological and zoological history, is particularly stimulating.

The book's text reflects a virtuoso performance by its two deeply knowledgeable authors. I can hardly find more than minor quibbles with it, and most of those involve identification matters pertaining to North American species that are rare in Cuba. I particularly applaud the authors' willingness to follow AOU taxonomy (as of 1998), sometimes ignoring their own published opinions. They wisely treat uncertain data conservatively, such as much of the published information concerning the rare and endemic Zapata Rail, especially its breeding biology. Information concerning Cuba's two rarest endemic subspecies, races of the Hook-billed Kite and the Ivory-billed Woodpecker, also is presented with suitable caution. The illustrations generally are to a high standard, although some may be considered more art-like than ideal for field identification. Cuba's native birds in general seem portrayed the best.

My only significant frustrations with this book are the absence of a gazetteer, rendering it difficult to understand local distributions, and the design of the naming page facing each plate. Plate numbers are inconspicuously concealed against the book's spine on the bottom of each facing page, and no reference to the corresponding text page is provided where each species is outlined and named. This concept may be acceptable for a book intended for browsing but seems inappropriate for a field guide, where users frequently want to move back-and-forth quickly between illustrations and the corresponding text. Most field users probably will prefer to annotate each plate's facing page, writing the plate number in the upper left corner and adding the page number of the text beside each species outline.

Active Florida birders and ornithologists interested in the West Indian avifauna should not hesitate to obtain this book. Although it does not completely replace other West Indian guides, it provides important information, often not available elsewhere,

about the Cuban range, status, and habits of all endemic West Indian species found in Cuba. It covers all but one West Indian endemic (Bahama Woodstar) that definitely has occurred in Florida. In many cases this book's text and illustrations are superior to other sources. This book also is essential for libraries supporting Cuban studies or Caribbean regional biology. Cuban expatriates may even want a copy simply for its plates, to evoke fond memories of their homeland.

We should all thank Cornell University Press for bringing this important work to reality given its somewhat limited market at present. A Spanish-language edition planned in the near future not only should promote sales, but it also should help the book directly achieve its goal of serving the Cuban people. Now we should pray for the ability to advance legally from voyeurs to visitors. When the "Gulf Stream Curtain" finally does fall, everyone interested in Cuba's birds should grab this book and hop the first available ship or flight. Cuba's glorious remaining wild areas with their special birdlife may not survive America's pent-up development juggernaut for long.—**P. William Smith**, P.O. Box 1992, Ocean Shores, Washington 98569.

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FIELD OBSERVATIONS

Summer Report: June-July 2001. This report consists of significant observations of birds submitted to the Field Observations Committee (FOC) or, in some cases, "plucked" off Internet lists. Submissions should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December-February), spring (March-May), summer (June-July), and fall (August-November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. We greatly prefer observations sent via e-mail. Addresses of the FOC members are found at the end of this report.

Sight-only observations are considered "reports" while only those supported by verifiable evidence (photographs, video or audio tapes, or specimens) are called "records." Species for which documentation is required by the FOS Records Committee (FOSRC; Bowman 2000, *Fla. Field Nat.* 28: 149-160) are marked with an asterisk (*). A county designation (*in italics*) accompanies the first-time listing of each site in this report. Abbreviations in this report are: CP = county park, ELAPP = Environmental Lands Acquisition and Protection Program (*Hillsborough*), ENP = Everglades National Park, EOS = end of season, LARA = Lake Apopka Restoration Area (*Orange*), NWR = national wildlife refuge, PPM = *Polk* phosphate mines, SP = state park, SRA = state recreation area, STF = sewage treatment facility, and N, S, E, W etc., for compass directions. Bold-faced species denote birds newly reported or verified in Florida, or record high counts.

Summary of the Summer Season

Rainfall this summer was plentiful, raising hopes that the drought finally was lifting. However, rainfall after July was sparse, and the drought continued through the fall. Temperatures were above normal. Only four FOSRC rarities were reported: at least two Masked Ducks continued at Pembroke Pines, the Heermann's Gull continued at Fort De Soto CP, while a Couch's Kingbird at Gulf Breeze and a Tropical Kingbird at Fort De Soto were single-day wonders. Other interesting observations were a Virginia Rail heard in *Brevard* in Jun, the first summer report in Florida of an American Golden-Plover (photographed in *Miami-Dade* in Jul), the state's first inland Arctic Tern at Lake Apopka (perhaps not entirely unexpected given the numerous reports off the Atlantic coast in May), an apparent Black-billed Cuckoo at St. Marks NWR in Jul, a Short-eared Owl (presumably of the West Indian subspecies) at Kissimmee Prairie in Jun, an Antillean Nighthawk in *Brevard*, a Bahama Mockingbird at Dry Tortugas NP, a Nelson's Sharp-tailed Sparrow in *Duval* in Jun furnishing the first accepted summer report, and the second summer report of Bronzed Cowbird in Florida. Lastly, the West Nile Virus was discovered in Florida and quickly spread to the central Peninsula. Given its lethal effects on corvids, West Nile Virus potentially could have dire effects on Florida Scrub-Jays.

This May-Jun Harry Robinson carefully recorded locations of territorial birds at the easternmost 3200 ha of Lake Apopka Restoration Area. The table lists the number of territories counted for 36 species of breeding birds. Habitats are primarily old fields and canals, with some temperate hammock and one stand of slash pines (*Pinus elliottii*).

Species	# of territories
Green Heron	25
Mottled Duck	7
Red-shouldered Hawk	9
Red-tailed Hawk	6
Northern Bobwhite	65
Purple Gallinule	16
Common Moorhen	126
Mourning Dove	29
Common Ground-Dove	116 (2× last year)
Yellow-billed Cuckoo	16
Great Horned Owl	7
Red-bellied Woodpecker	58
Northern Flicker	10
Downy Woodpecker	31
Great Crested Flycatcher	13
Loggerhead Shrike	5
Blue Jay	42
Barn Swallow	54
Tufted Titmouse	7
Brown Thrasher	18
Carolina Wren	153
European Starling	8
Northern Parula	10
Pine Warbler	8
Yellow-breasted Chat	8
Northern Cardinal	320 (2× last year)
Blue Grosbeak	76
Indigo Bunting	54
Painted Bunting	19 males (17 ad, 2 imm)
Boat-tailed Grackle	152
Common Grackle	40
Eastern Meadowlark	12
Red-winged Blackbird	932
Orchard Oriole	10
Eastern Towhee	72
House Sparrow	1

Species Accounts

Common Loon: singles in winter plumage off St. Teresa Beach (*Franklin*) 7 Jul (J. Murphy) and at Tram Road STF (*Leon*) 16 Jul (G. Menk); 1 in breeding plumage at New Port Richey (*Pasco*) 14 Jul (E. Wood).

Black-capped Petrel: 1 *ca.* 19 km off Key Biscayne (*Miami-Dade*) 14 Jul (A. Prather).

Northern Gannet: 1 weakened bird found *ca.* 9 km inland at Crystal River (*Citrus*) 13 Jun was sent to Suncoast Seabird Sanctuary (*fide* M. Knudsen and C. Eisele); 1 first-year bird seen alive at Cedar Key (*Levy*) 18 Jul was found dead two days later (J. Fajans, to FLMNH).

American White Pelican: 40+ at Bald Point (*Franklin*) 10-15 Jun (J. Dozier); 1000 at White Sands Lake, Keystone Heights (*Clay*) 1 Jul ff (J. Blois); *ca.* 30 at Flamingo,

ENP (*Monroe*) 2 Jul (B. Roberts); 7 near the *Miami-Dade* landfill 6 Jul (L. Manfredi); up to 2400 (27 Jun) summered at LARA (H. Robinson).

Brown Pelican: a statewide breeding survey 13-19 Jun located 6432 pairs in 39 colonies, considerably lower than the annual mean of 9317 pairs since surveys began in 1968—the reason for the decline this year is unknown (S. Nesbitt); 4 (1 adult, 3 juveniles) at Mulberry (*Polk*) 14 Jun (T. Palmer).

Magnificent Frigatebird: 1 at Weekiwachee Preserve (*Hernando*) 3 Jun (C. Black); 157 in several groups at Gulf Breeze (*Santa Rosa*) 12 Jun the day after the passage of Tropical Storm *Allison* (R. Clark).

Least Bittern: 1 in mangroves at Green Key, New Port Richey 7 Jul (J. McKay, K. Tracey).

Wading Birds: excluding Cattle Egrets, 38,647 pairs bred in the greater Everglades ecosystem, with over half of these at Loxahatchee NWR (*Palm Beach*) this season (*fide* D. Gawlik).

"Great White Heron:" 1 immature at Newnans Lake (*Alachua*) 18 Jul-EOS (J. Hintermister et al.).

Great Egret: 200 at Newnans Lake 18 Jul (J. Hintermister).

Reddish Egret: 1 dark morph at Phipp's Point, Alligator Point (*Franklin*) 7 Jul (J. Murphy); 1 at Carrabelle Beach (*Franklin*) 7 and 28 Jul (G. Sprandel); 12 (3 light and 9 dark) at Hagens Cove (*Taylor*) and 1 dark morph at Adams Beach (*Taylor*) 30 Jul (J. Hintermister, H. Adams); 86 pairs, thought to be a post-plume-hunting high count, bred in 10 colonies in *Hillsborough*, *Manatee*, *Pinellas*, and *Sarasota*, with 45 pairs at Alafia Bank (A. and R. Paul).

Black-crowned Night-Heron: 75 pairs bred at Kissimmee Prairie Preserve SP (*Okeechobee*) 20 Jul (P. Small).

Glossy Ibis: 335 pairs bred in 4 colonies in *Hillsborough* and *Manatee*, about half of typical numbers (A. and R. Paul).

Roseate Spoonbill: 2 near Lake Wales (*Polk*) 6 Jun (D. Morrison); 5 at Lake Hollingsworth (*Polk*) 5 Jul (T. Palmer); 27 first-year birds at Holiday (*Pasco*) 6 Jul (K. Tracey); 9 at LARA 15-19 Jul (H. Robinson); 1 immature at Newnans Lake 18 Jul (J. Hintermister); up to 3 summered at Lake Hamilton (*Polk*; B. and L. Cooper); 180 pairs bred in 6 colonies in *Hillsborough*, *Manatee*, and *Pinellas*, about the same number as last year (A. and R. Paul).

Flamingo species: 1 in flight over the Bayside Bridge over Old Tampa Bay (*Pinellas*) 19 Jun (R. Grant).

Fulvous Whistling-Duck: 2 at Newnans Lake 3 Jul (M. Meisenburg); 100s at the Belle Glade Agricultural Station (*Palm Beach*) 8 Jul (B. Hope).

Black-bellied Whistling-Duck: 4 adults at Central Park, Ormond Beach (*Volusia*) 26 Jun (C. Stoccardo); "several" at the Belle Glade Agricultural Station 8 Jul (B. Hope); three *Alachua* reports: 2 adults at Gainesville 10 Jun (L. Bliss), 2 at Paynes Prairie Preserve SP 18 Jul (J. Hintermister), and 5 at Newnans Lake 24 Jul (J. Hintermister).

Mottled Duck: 150 at Newnans Lake 16 Jun (R. Rowan); 61 at LARA 4 Jul (H. Robinson); 27 at Lake Hamilton 18 Jul (B. and L. Cooper).

Northern Pintail: 1 female at W Kendall (*Miami-Dade*) 10-27 Jul (J. Boyd et al.).

Blue-winged Teal: 4 at PPM 1 Jul (P. Timmer, C. Geanangel).

Ring-necked Duck: 1 in *Walton* 8 Jun (B. Reid, B. Clark).

*Masked Duck: 1 with an all-azure bill remained at Pembroke Pines (*Broward*) to 21 Jun (A. and B. Hansen, R. MacGregor), while another with some dark on the bill lingered to 9 Jun (J. Boyd). The latter individual had less black in the bill than the one J. Boyd photographed 22 May, but it is not known whether this implies that at least three males were present (as was suspected by at least two other observers), or whether the bill color on the second male changed somewhat over 18 days.

Ruddy Duck: 2 (female and male) at Lake Apopka Restoration Area 21 Jul (D. Simpson, K. Radamaker).

Swallow-tailed Kite: 10 near Fort Lonesome (*Manatee*) 11 Jun (D. and P. Fellers).
White-tailed Kite: 1 along CR-827 *ca.* 16-24 km SE of SR-880 (*Palm Beach*) 14 Jul (D. Santoni).
Sharp-shinned Hawk: 1 at LARA 22 and 29 Jul (H. Robinson).
Cooper's Hawk: 2 juveniles at Cape Coral (*Lee*) 5-6 Jul (C. Ewell, A. Salcedo).
Short-tailed Hawk: 1 dark morph at Weekiwachee Preserve 7 Jul (C. Black) and 1 light morph there 28 Jul (A. and B. Hansen); 1 dark morph at Flamingo, ENP 10 Jul (B. Roberts); 2 (1 dark and 1 light) near Tiger Creek (*Polk*) 15 Jul (D. Goodwin, B. Cowart); 1 light morph at Saddle Creek CP 29 Jul (D. Wassmer, L. Saul, L. Albright).
Red-tailed Hawk: 1 adult summered at W Kendall (J. Boyd).
Crested Caracara: 22 in one flock in *Okeechobee* 25 Jun (L. and P. Gray).
American Kestrel: 1 at LARA 15 Jul (H. Robinson); 1 in *Okaloosa* 19 Jul (D. Ware).
Black Rail: 1 heard at Belle Glade Marina (*Palm Beach*) 14 Jul (P. Bithorn, J. Villamil).
Virginia Rail: 1 (heard only) called "a series of *kid-dicks*" four times at Canaveral Marsh Conservation Area (*Brevard*) 9 Jun (L. Malo).
Purple Gallinule: 1 at Boca Ciega Park (*Pinellas*) to 12 Jun (I. Hernandez).
Sandhill Crane: 1 pair with 1 chick just a few days old at Kissimmee Prairie Preserve SP 12 Jun (P. Small).
Whooping Crane: breeding again occurred but again was not successful. Fifteen pairs formed, 9 territories were defended, and eggs were laid in 2 nests (S. Nesbitt).
Black-bellied Plover: 1 at PPM 17 Jun (P. Timmer, C. Geanangel); 1 at LARA 25 Jul (H. Robinson).
American Golden-Plover: 1 in breeding plumage at Homestead (*Miami-Dade*) 22-27 Jul (V. McGrath et al., photos to FOC by D. LaPuma) was the first summer report.
Wilson's Plover: 4 pairs and 1 chick at Fort Matanzas National Monument (*St. Johns*) 25 May (*fide* P. Powell); 40 adults and 5 chicks at Talbot Islands SP (*Duval*) 23 Jun (P. Leary); 3 pairs with several chicks at Wolf Branch ELAPP site 24 Jun (D. Powell, B. Pranty); 13 adults and 5 chicks at Huguenot Memorial Park (*Duval*) in Jun (R. Clark); 30 or more at Lighthouse Pond, St. Marks NWR (*Wakulla*) 8 Jul (T. Curtis); 2 adults and 2 young at the S end of CR-361 (*Dixie*) 30 Jul (J. Hintermister, H. Adams).
Semipalmated Plover: 2 at LARA 27 Jul (H. Robinson).
Piping Plover: 1 at Crandon Beach (*Miami-Dade*) 21 Jul (H. Druid); 4 at Fort De Soto CP 27 Jul (K. Allen).
American Oystercatcher: the first statewide survey located 391 definite or probable pairs and 42 singles. Many rooftop nests were found, especially in *Pinellas* (N. Douglass et al.).
Black-necked Stilt: up to 8 at Newnans Lake 16-26 Jun (R. Rowan, M. Manetz).
American Avocet: up to 4 at Newnans Lake 3-21 Jun (T. Weber, M. Manetz); 1 at Spoonbill Pond (*Duval*) 13 Jul (P. Leary); 1 at St. Marks NWR 24 Jul (N. Wienders).
Greater Yellowlegs: 4 St. Sebastian River Buffer Preserve (*Indian River*) 26 Jun (D. Simpson); 1 at Springhill Road STF (*Leon*) 2 Jul (G. Menk).
Lesser Yellowlegs: 17 St. Sebastian River Buffer Preserve 26 Jun (D. Simpson); 1 at PPM 1 Jul (P. Timmer, C. Geanangel).
Solitary Sandpiper: 1 at LARA 18-22 Jul (H. Robinson); 1 at Homestead 26 Jul (J. Boyd et al.).
Willet: 4 at LARA 4 Jul (H. Robinson); 1 at Newnans Lake 8 Jul (T. Weber); 3 flew over Springhill Road STF 25 Jul (G. Menk).
Spotted Sandpiper: 1 at Green Key 7 Jul (J. McKay); 1 at LARA 11 Jul (H. Robinson); 16 at Springhill Road STF and 4 at Tram Road STF 30 Jul (G. Menk).
Upland Sandpiper: 1 at LARA 27 Jul (H. Robinson).
Whimbrel: 1 at Flamingo, ENP 17 Jul (B. Roberts).
Long-billed Curlew: 1 at Cedar Key 26 Jul (G. Kiltie); 1 at Fort De Soto CP 27 Jul (K. Allen).

Marbled Godwit: 1 at Phipp's Point 7 Jul (J. Murphy); 6 summered at Carrabelle Beach (G. Sprandel).

Sanderling: 1 at the Belle Glade Agricultural Station 14 Jul (P. Bithorn, J. Villamil).

Semipalmated Sandpiper: 1 at LARA 4 Jul (H. Robinson); 2 at Snake Bight, ENP 17 Jul (B. Roberts).

Western Sandpiper: 1 at Snake Bight, ENP 17 Jul (B. Roberts).

Least Sandpiper: 43 at PPM 1 Jul (P. Timmer, C. Geanangel); 3 in breeding plumage at W Kendall 7 Jul (J. Boyd).

White-rumped Sandpiper: 6 at LARA 10 Jun (H. Robinson); 2 at PPM 17 Jun (P. Timmer, C. Geanangel); 1 at Viera 21 Jun (A. and B. Hansen).

Pectoral Sandpiper: 1 at LARA 15 Jul (H. Robinson); 1 at Homestead (*Miami-Dade*) 19 Jul (L. Manfredi); 1 at PPM 22 Jul (P. Timmer, C. Geanangel).

Stilt Sandpiper: 10 at LARA 8 Jul, and 9 there 15 Jul (H. Robinson); 30 at Homestead 25 Jul-EOS (R. Webb, D. LaPuma et al.).

Buff-breasted Sandpiper: 1 at LARA 29 Jul (H. Robinson).

Ruff: 1 female at Viera 10-11 Jun (D. Feuss, R. Webb et al.); 1 female at Homestead 26 Jul (J. Boyd et al.).

Dowitcher species: 1 at Newnans Lake 8 Jul (M. Manetz).

Short-billed Dowitcher: 1 at LARA 15 Jul (H. Robinson).

Wilson's Phalarope: 1 at Spoonbill Pond 13 Jul and three there shortly afterward, with 1 remaining two weeks (P. Leary); 1 at Homestead 22 Jul (V. McGrath); 2 near Big Talbot Island SP (*Duval*) 24 Jul (K. Allen).

Laughing Gull: over 800 nests at Huguenot Park 13 Jun (T. Breen); 19,300 pairs bred in *Hillsborough*, *Manatee*, and *Pinellas*, with 10,000 pairs at Egmont Key NWR (*Hillsborough*; A. and R. Paul).

***Heermann's Gull:** 1 summered at Fort De Soto CP (L. Atherton et al.).

Herring Gull: 1 emaciated immature at Bald Point (*Franklin*) 15 Jul (J. Murphy, J. Dozier).

Great Black-backed Gull: 1 first-year bird near the *Miami-Dade* landfill 6 Jul (L. Manfredi).

Gull-billed Tern: 8 at PPM 17 Jun (P. Timmer, C. Geanangel); 1 pair at Fort George Island (*Duval*) all Jun (R. Clark); 44 at Nassau Sound Bird Islands (*Duval*) 4 Jul, and 5 chicks alive there 22 Jul after strong winds nearly inundated the island; 2 other chicks were found dead and many eggs were destroyed (P. Leary); 1 at Homestead 23 Jul (J. Rosenfield, M. Wheeler); other breeding pairs included 9 in Hillsborough Bay (*Hillsborough*; A. and R. Paul), and 22 nests at Bird Island, Apalachicola (*Franklin*; J. Gore).

Caspian Tern: 107 pairs bred in 2 colonies in the Tampa Bay area *Hillsborough* and *Pinellas* (A. and R. Paul); 206 pairs bred at Bird Island, Apalachicola (J. Gore).

Royal Tern: over 400 nests at Huguenot Memorial Park 13 Jun (T. Breen); 3766 pairs bred in 3 colonies in *Hillsborough*, *Manatee*, and *Pinellas*, with 3540 of these at Egmont Key (A. and R. Paul).

Sandwich Tern: 1 at LARA 1-15 Jul (H. Robinson); 715 pairs bred at Egmont Key NWR (A. and R. Paul).

Common Tern: up to 4 at LARA to 24 Jun, and 1 there 11-15 Jul (H. Robinson); 2 nonbreeding adults at Lake Osprey (*Sarasota*) 30 Jun (J. Dubi, J. Gaetzi); 1 at Huguenot Park 24 Jul (K. Allen).

Arctic Tern: 1 **inland** at LARA 17 Jun (H. Robinson).

Forster's Tern: 3 in breeding plumage at Springhill Road STF 23 Jun (G. Menk); reported on all 18 trips to LARA, with 40 there 3 & 13 Jun (H. Robinson).

Least Tern: 60 adults and 24 nests at Fort Matanzas National Monument 25 May (*fide* P. Powell); 2 pairs at Huguenot Memorial Park 13 Jun (T. Breen); *ca.* 6 pairs nested (unsuccessfully) at Wolf Branch ELAPP site 24 Jun (D. Powell, B. Pranty); no successful nests at Guana River SP (*St. Johns*) or Anastasia Island SRA (*St. Johns*) (*fide* P. Powell).

BLACK TERN: up to 7 at LARA to 15 Jul (H. Robinson); *ca.* 10 in breeding plumage at Fort Pickens (*Santa Rosa*) 13 Jun (R. Clark).

BLACK NODDY: 1 at Dry Tortugas NP (*Monroe*) 9 Jul (E. Borowik, details to FOSRC).

BLACK SKIMMER: over 50 nests at Huguenot Memorial Park 13 Jun (T. Breen); 500 at Nassau Sound Bird Islands 4 Jul, and 62 dead and 79 living chicks there 22 Jul (P. Leary); up to 17 summered at LARA (H. Robinson).

RINGED TURTLE-DOVE: 1 at Seminole (*Pinellas*) in mid-Jun and mid-Jul (J. Fisher).

EURASIAN COLLARED-DOVE: 303 at a roost near Winter Haven (*Polk*) 13 Jul (T. Palmer).

WHITE-WINGED DOVE: 7 in a flock at Brandon (*Hillsborough*) 5 Jun (B. Pranty); 2 at Ocala (*Marion*) 19 Jun (C. Retey); singles at Gainesville (*Alachua*) 3-7 Jul and 28-29 Jul (N. and R. Rowan); 1 at Gulf Breeze 10-15 Jul (B. and L. Duncan).

MOURNING DOVE: 2120 at LARA 8 Jul (H. Robinson).

BUDGERIGAR: 1 yellow morph at Seminole 25 Jun and another there 31 Jul (J. Fisher).

MONK PARAKEET: 8 at Gainesville have been seen "off and on" since summer 2000 (D. Beatty); 1 at Winter Park (*Orange*) 17 Jun (B. Anderson).

BLACK-BILLED CUCKOO: 1 at St. Marks NWR 13 Jul (T. Curtis) was described rather well but the head was not seen well.

MANGROVE CUCKOO: 1 called dozens of times at Cockroach Bay (*Hillsborough*) 2 Jun (D. Powell, B. Pranty); 1 at Weedon Island Preserve (*Pinellas*) 18 Jun (R. Webb).

BURROWING OWL: 9 at three burrows near Fort Lonesome 11 Jun (P. Fellers, D. Fellers); 4 pairs at Kissimmee Prairie Preserve SP (*Okeechobee*) 15 Jun (P. Small).

SHORT-EARED OWL: 1 flushed from the ground several times at Kissimmee Prairie Preserve SP (*Osceola*) 27 Jun (R. Mulholland).

ANTILLEAN NIGHTHAWK: 1 that called "*pitty-pa-pitt* repeatedly" in *Brevard* 1 Jun (B. Paxson).

CHIMNEY SWIFT: 517 roosted in a single chimney at New Port Richey 18 Jun (K. and L. Tracey).

RUBY-THROATED HUMMINGBIRD: 1 at Loop Road, Big Cypress National Preserve (*Monroe*) 7 Jul (P. Bithorn, B. Purdy, J. Villamil).

BELTED KINGFISHER: 1 at Boyd Hill Nature Park, St. Petersburg (*Pinellas*) 18-19 Jun (D. Goodwin); 1 at Boca Ciega Bay, St. Petersburg 23 Jun (M. Wilkinson); 1 at St. Marks NWR 8 Jul (J. Dozier et al.); 1 at Flamingo *ca.* 9 Jul (B. Roberts); 1 at Green Key 26 Jul (K. Tracey, J. McKay); 1 at Bayport (*Hernando*) 28 Jul (C. Black).

*COUCH'S KINGBIRD: 1 at Gulf Breeze 25 Jun (B. Duncan) was the 8th area report of the Tropical/Couch's kingbird complex in the region, with seven of these since 1992 and six at the same specific site. Asks Bob Duncan, "What's going on? This area has had almost daily coverage for over 30 years. [The kingbirds] could not have been overlooked in the past."

*TROPICAL KINGBIRD: 1 called at Fort De Soto CP 14 Jun (L. Atherton).

EASTERN KINGBIRD: 1 migrant at Weekiwachee Preserve 21 Jul (A. and B. Hansen); 3 migrants at Green Key 28 Jul (K. Tracey).

GRAY KINGBIRD: pairs bred at downtown Pensacola and at Gulf Breeze but still have not returned to their "traditional stronghold" at Fort Pickens since Hurricane *Opal* hit in Oct 1995 (B. Duncan); 15 at Green Key 29 Jul (K. Tracey).

RED-EYED VIREO: 2 at A.D. Barnes Park (*Miami-Dade*) 19 Jul (J. Rosenfield) and 3 there 21 Jul (H. Druid); 2 at Boca Ciega Park 24 Jul (J. Fisher); 16 at Saddle Creek CP 29 Jul (D. Wassmer, L. Saul).

PURPLE MARTIN: 2 at Flamingo, ENP 6 Jun (J. Boyd); several at Long Pine Key, ENP (*Miami-Dade*) 6 Jun (J. Boyd); *ca.* 3000 at Dadeland (*Miami-Dade*) 12 Jul (J. Rosenfield).

TREE SWALLOW: 1 at Brown's Farm Road (*Palm Beach*) 14 Jul (P. Bithorn, J. Villamil); 1 at LARA 22 Jul (H. Robinson).

NORTHERN ROUGH-WINGED SWALLOW: 342 at PPM 1 Jul (P. Timmer, C. Geanangel).

Bank Swallow: 1 at LARA 13 Jun-EOS, with 3 there 15-18 Jul (H. Robinson); duos at St. Marks NWR 12 Jul and Bald Point 13 Jul (T. Curtis); 20 at Pahokee (*Palm Beach*) 14 Jul (D. Simpson); 1 at Playalinda Beach, Canaveral National Seashore (*Brevard*) 22 Jul (D. Simpson); 1 at W Kendall 24 Jul (J. Boyd).

Cliff Swallow: 1 at St. Marks NWR 8 Jul ff (J. Dozier et al.); 3 at LARA 8 Jul and 1 there 22 and 29 Jul (H. Robinson); 1 at Brown's Farm Road 14 Jul (P. Bithorn, J. Villamil).

Barn Swallow: about 30 at Flamingo, ENP 8 Jul (B. Roberts); about 20 at Homestead 8 Jul (J. Boyd); 3 at Kissimmee Prairie Preserve SP (*Okeechobee*) 20 Jul (P. Small); 308 at LARA 22 Jul (H. Robinson).

Blue-gray Gnatcatcher: 1 migrant at Largo (*Pinellas*) 12 Jul (J. Fisher); migrants were "numerous" at A.D. Barnes Park 22 Jul (B. Rapoza).

American Robin: 1 adult fed a fledgling at Tallahassee 22 Jun (G. Menk).

Gray Catbird: 1 at LARA 20 Jun and 8 and 29 Jul (H. Robinson).

Bahama Mockingbird: 1 at Dry Tortugas NP 9 Jul (E. Borowik, details to FOSRC).

Brown Thrasher: 1 adult with 3 fledglings at A.D. Barnes Park 20 Jun (J. Rosenfield) and other summering birds at W Kendall, including 2 pairs and another bird carrying nesting material (*fide* J. Boyd).

Common Myna: 1 pair with five juveniles at Key West 31 Jul (J. Ondrejko).

Northern Parula: 30 at Saddle Creek CP 29 Jul (D. Wassmer, L. Saul).

Yellow Warbler: 1 at Gulf Breeze 18 Jun (B. Duncan); 1 at LARA 11 Jul, and 7 there 27 Jul (H. Robinson); 1 at Magnolia Park (*Orange*) 21 Jul (D. Simpson, K. Radamaker); 1 at Green Key 24 Jul (K. Tracey); 1 at Dry Tortugas NP 26 Jul (N. Pieplow *fide* J. Ondrejko).

Cape May Warbler: 1 female in W *Walton* 16 Jul (D. Ware, B. Reid).

Black-throated Blue Warbler: 1 male sang at Key West 10 Jun (J. Ondrejko); 1 male sang at A.D. Barnes Park (*Miami-Dade*) 20-24 Jun (J. Rosenfield, R. Diaz).

Yellow-throated Warbler: 1 at A.D. Barnes Park 21-22 Jul (H. Druid, B. Rapoza).

Prairie Warbler: 1 migrant at Al-Bar Ranch (*Pasco*) 5 Jul (B. Pranty); 3 at LARA 11 Jul (H. Robinson); 1 migrant at Largo 12 Jul (J. Fisher); 1 at A.D. Barnes Park 19 Jul (J. Rosenfield).

Palm Warbler: 1 at Green Key 24 Jul (K. Tracey, details to FOC).

Black-and-white Warbler: 1 at O'Leno SP (*Alachua*) 7 Jul (J. Hintermister); 1 at Big Pine Key (*Monroe*) 15 Jul (C. Borg); 1 at A.D. Barnes Park 22 Jul (B. Rapoza); 1 adult male at Key West 27 Jul (J. Ondrejko).

American Redstart: 1 first-year male at West Lake Nature Center (*Broward*) 4 Jun (B. Boeringer); 1 at LARA 22-27 Jul (H. Robinson); 1 at Boca Ciega Park 24 Jul (J. Fisher).

Prothonotary Warbler: 1 migrant at Green Key 27 Jul, and 2 there 28 Jul (K. Tracey).

Worm-eating Warbler: 1 that sang at Cotton Lake (*Escambia*) 2 Jun may have been a breeding bird (B. Duncan).

Louisiana Waterthrush: 2 at Boca Ciega Park 5 Jul (J. Fisher); 2 at LARA 8 Jul (H. Robinson); 2 at Juniper Springs (*Marion*) 9 Jul (D. Leonard); 1 at A.D. Barnes Park 22 Jul (B. Rapoza).

Kentucky Warbler: 1 at Bonner Park, Largo 24-28 Jul (I. Hernandez, J. Fisher).

Common Yellowthroat: 1 at Big Pine Key 11 Jul (C. Borg).

Hooded Warbler: 1 female at John Chestnut, Jr. CP (*Pinellas*) 28 Jul (R. Smart).

Yellow-breasted Chat: 1 sang at Crystal River State Buffer Preserve (*Citrus*) 4 Jul (A. and B. Hansen); 2 at Paynes Prairie Preserve SP 15 Jul (M. Manetz).

Bachman's Sparrow: over 150 singing males at point counts at Kissimmee Prairie Preserve SP (*Okeechobee*) 4 Apr-29 Jun (R. Mulholland).

Florida Grasshopper Sparrow: 90 singing males at point counts at Kissimmee Prairie Preserve SP 4 Apr-29 Jun. Surveys covered only 9% of suitable sparrow habitat at the park (R. Mulholland).

NELSON'S SHARP-TAILED SPARROW: 1 at Pablo Creek (*Duval*) 11 Jun (S. Jue, K. NeSmith, details to FOC) was apparently the first accepted summer report; Stevenson and Anderson (1994) do not accept the only previous summer report. According to J. Greenlaw (*in litt.*), Nelson's arrive back at northern breeding areas "notoriously" late because vegetation in their marshes tends to foliate later than vegetation in marshes that support breeding Saltmarsh Sharp-tailed Sparrows.

SEASIDE SPARROW: 13 along 1.6 km of Bottoms Road, St. Marks NWR (*Wakulla*) 8 Jun (J. Dozier).

NORTHERN CARDINAL: 27 at Saddle Creek CP (*Polk*) 30 Jul (P. Fellers).

INDIGO BUNTING: 1 in female plumage near Flamingo, ENP 19 Jun (B. Roberts).

DICKCISSEL: 1 male at Holey Land WMA (*Palm Beach*) 29 Jul (D. LaPuma et al.) was heard "uttering some guttural '*clicks*' while lightly pumping its tail"—behavior that suggested a breeding bird (G. Basili, pers. comm.).

SHINY COWBIRD: 3 males at Fort De Soto CP 14 Jun (L. Atherton et al.); up to 2 males at LARA 8-25 Jul (H. Robinson); up to 2 females and 6 males summered at Key West (J. Ondrejko).

BRONZED COWBIRD: 1 at Princeton (*Miami-Dade*) 11 Jul (L. Manfredi).

BROWN-HEADED COWBIRD: 4 at PPM 17 Jun (P. Timmer, C. Geanangel); 2 females and 2 males were the first to summer at Key West (J. Ondrejko).

AMERICAN GOLDFINCH: 1 male at Tallahassee 25 Jun (B. Scott); 1 male at St. Augustine (*St. Johns*) 26 Jun (J. Holstein).

EUROPEAN GOLDFINCH: singles at two feeders at W Pensacola (*Escambia*) all summer (*fide* B. Duncan).

BISHOP SPECIES: 1 in female plumage at Fort De Soto CP 14 Jun was thought to be either an Orange Bishop or a Yellow-crowned Bishop (L. Atherton, photos to FOC).

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Corrections to Fall 2000 issue: A few last-minute changes to the page proofs did not get transferred to the published report, and are corrected here: The report of the "Helmeted Touraco" should be deleted, as there is no such bird with that English name, and the original observer could not be contacted. (A poor quality photograph of the bird cannot be identified, perhaps not even to family). The Golden-winged Warbler account should have read, ". . . among 12 reports 26 Aug-8 Oct . . ." And in the Yellow-breasted Chat account, "Long Key" should be Long Pine Key.

Winter 2000-2001 report not published previously: 1102 active Bald Eagle nests that fledged about 1311 young were found statewide this winter, the highest total since surveys began in 1973 (Steve Nesbitt).

Prepared by **Bill Pranty**, state compiler (Audubon of Florida, 410 Ware Boulevard, Suite 702, Tampa, Florida 33619; e-mail billpranty@hotmail.com). Regional compilers are **Bruce H. Anderson** (2917 Scarlet Road, Winter Park, Florida 32792; e-mail scizortail @aol.com, **John H. Boyd III** (15770 SW 104th Terrace, Apartment 103, Miami, Florida 33196, e-mail boydj@fiu.edu), **Linda Cooper** (558 Sunshine Boulevard, Haines City, Florida 33844-9540; e-mail Lcooper298@aol.com), **Bob and Lucy Duncan** (614 Fairpoint Drive, Gulf Breeze, Florida 32561, e-mail duncan44@juno.com), **Charlie Ewell** (1121 SW 11th Court, Cape Coral, Florida 33991, e-mail anhinga42@earthlink.net), **Bev Hansen** (6573 Pine Meadows Drive, Spring Hill, Florida 34606; e-mail bevalhansen @earthlink.net), **Gail Menk** (2725 Peachtree Drive, Tallahassee, Florida 32304), **David Powell** (1407 Storington Avenue, Brandon, Florida 33511; e-mail vireo@vireos.com), and **Peggy Powell** (2965 Forest Circle, Jacksonville, Florida 32257).

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DISTRIBUTION, ABUNDANCE, AND BREEDING BIOLOGY OF POTENTIAL COWBIRD HOSTS ON SANIBEL ISLAND, FLORIDA

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Abstract.—We present baseline data on the distribution, abundance, and breeding biology of potential cowbird hosts on Sanibel Island, Florida, so that future changes in these bird populations due to habitat alteration and Brown-headed (*Molothrus ater*) and Shiny cowbird (*Molothrus bonariensis*) parasitism may be assessed. The number of species ranged from 5 in the red mangrove swamp to 10 in the interior scrub. The Northern Cardinal (*Cardinalis cardinalis*) was found in all habitats, while the Black-whiskered Vireo (*Vireo altiloquus*), Common Yellowthroat (*Geothlypis trichas*), and Eastern Towhee (*Pipilo erythrophthalmus*) were largely restricted to a single habitat. Highest densities recorded were for the Northern Cardinal and the Black-whiskered Vireo in mangrove habitat and the Common Yellowthroat in *Spartina* marsh. A total of 126 active nests of the ten targeted species were located, with most nests belonging to Red-winged Blackbirds (*Agelaius phoeniceus*), Northern Cardinals, and Gray Kingbirds (*Tyrannus dominicensis*). Predation was the primary cause of nest failure, accounting for 84 of 91 (92.3%) of the failures. Both cowbird species were found primarily in developed areas on the island, although they were also seen in "natural" habitats. As only two parasitized Red-winged Blackbird nests were found, cowbird parasitism does not appear to be a significant threat at this time. We note that this host species is the only one for which we obtained a very large sample size of nests, and that other species are probably also parasitized. However, we feel that it is only a matter of time before higher levels of parasitism are observed.

Recent changes in the range of the brood parasitic Shiny Cowbird (*Molothrus bonariensis*) and Brown-headed Cowbird (*M. ater*) have brought them into contact with avian communities that have never experienced brood parasitism. Historically, the Shiny Cowbird was confined to South America, and the Brown-headed Cowbird was confined to central and western North America. With the reduction of forest and large-scale alterations associated with agriculture and animal husbandry, cowbirds have expanded their geographical ranges, bringing

them into contact with hosts that lack defenses against brood parasitism (Mayfield 1977; Cruz et al. 1985; Cruz et al. 1989, 2000; Pranty 2000). The Shiny Cowbird was first recorded in Florida in 1985 (Smith and Sprunt 1987). From the opposite direction, the North American Brown-headed Cowbird has expanded rapidly through peninsular Florida since 1985 (Cruz et al. 2000).

Because of the small population size and high degree of isolation of the south Florida avifauna (Robertson and Kushlan 1984), contact with cowbirds is potentially more detrimental than in other North American areas where new contact between species occurs more gradually and over a wider area. Not only are many Florida species (e.g., vireos and warblers) restricted in range, but they may also be confined to specific habitats, factors that make them particularly susceptible to detrimental effects of parasitism.

Between July and August 1994, and between April and July 1995, and July 1997, we studied the breeding songbird community on the J. N. "Ding" Darling National Wildlife Refuge (henceforth Refuge) and adjacent properties owned by the Sanibel-Captiva Conservation Foundation (SCCF) on Sanibel Island, southwestern Florida (Fig. 1). Our study was designed to obtain baseline data on (1) the distribution and abundance of Brown-headed and Shiny cowbirds; (2) the abundance, breeding biology, and habitat use of potential cowbird host species; and (3) the potential impact of cowbirds on host populations.

Study Sites

We collected data in six different habitat types found on the Refuge and on SCCF: *Spartina* marsh, interior scrub, palm forest, transitional woodland, mixed mangrove woodland, and red mangrove swamp. Descriptions provided are based on personal familiarity with the habitats and Cooley (1955).

1. Spartina *marsh*. Previously far more widespread (Cooley 1955), extensive tracts of *Spartina* remain on the SCCF property and on the Refuge. The dominant vegetation in the marsh habitat is the grass *Spartina latifolia*, which occurs in almost pure stands in some areas. Herbaceous vegetation found in association with *Spartina* included leather fern (*Acrostichum daniafolium*) and sea oxeye daisy (*Borrichia frutescens*). In drier areas extensive clumps of woody vegetation including sabal palms (*Sabal palmetto*), saltbush (*Baccharis halimifolia*) and wax myrtle (*Myrica cerifera*) occur, while very wet areas often have patches of cattails (*Typha* spp.).

2. *Interior scrub*. The scrub habitat is a mixture of short trees and shrubs (generally < 3 m tall) that form dense thickets in the upland areas. Common woody species include saltbush, wax myrtle, Florida privet (*Forestiera segregata*), wild lime (*Zanthoxylum fagara*), and white indigo berry (*Randia aculeata*). Thickets often contain many thorny lianas, as well as the vines Virginia creeper (*Parthenocissus quinquefolia*) and poison ivy (*Rhus toxicodendron*).

3. *Palm forest*. This upland habitat is dominated by sabal palm, which occurs both in monotypic stands and mixed with various hardwoods. Other trees commonly associated with the palm forest habitat include gumbo limbo (*Bursera simaruba*), strangler fig (*Ficus aurea*), and sea grape (*Coccoloba uvifera*). This forest is much taller than the scrub

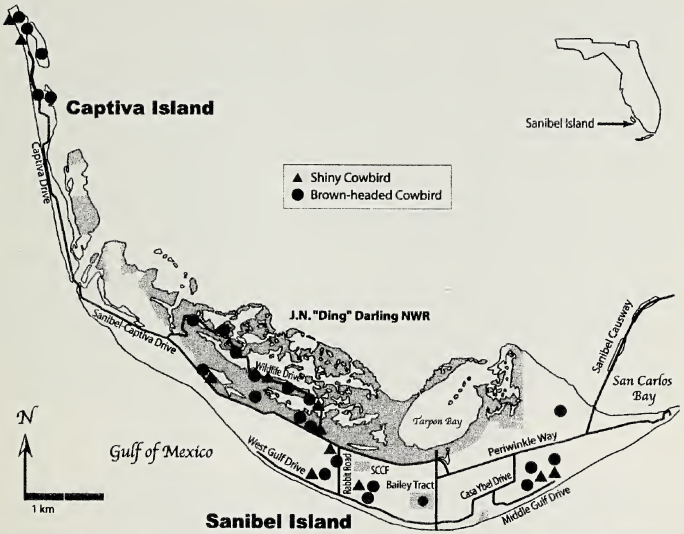

Figure 1. Distribution of Brown-headed and Shiny cowbirds on Sanibel and Captiva Islands. Data based on field observations.

habitat, with trees often reaching heights of 10 m or more, and generally has a relatively open understory with only scattered clumps of shrubby vegetation.

4. *Transitional woodland.* Transitional woodland occurs in a narrow belt between the palm forest and the mangrove woodlands. These areas are periodically flooded by high tides and several more salt-tolerant tree species occur in the zone. Dominant woody plants include white mangrove (*Laguncularia racemosa*), buttonwood (*Conocarpus erectus*), and sea grape. In many areas a thick mat of the succulent *Batis maritima* covers the ground. Trees in this habitat rarely exceed 12 m in height.

5. *Mixed mangrove woodland.* This woodland is primarily a mixture of black mangrove (*Avicennia germinans*) and red mangrove (*Rhizophora mangle*) trees between 6 and 10 m high, with occasional patches of buttonwood and white mangrove. It occurs as a broad belt between the transitional woodland and the red mangrove swamps.

6. *Red mangrove swamp.* This habitat occurs in a belt along the leeward side of the island, and is dominated by red mangrove trees 6 to 12 m tall. In most areas, red mangroves occur in either monotypic stands or in association with black mangrove.

Methods

Point counts. For seven weeks during June and July 1995, we surveyed the avian community using fixed-radius point counts as described in Hutto et al. (1986). Counts took place once per week at 48 points, eight in each of the six habitats. Ten minutes were spent recording all species seen and heard within 70 m of each point. All counts took place between 07:00 and 09:30 when birds were most actively singing. Densities of potential host species were determined by averaging the number of birds detected at

each point over the seven-week period, adding the averages for all points within a given habitat, and dividing by the amount of habitat surveyed.

Breeding Biology. During July and August 1994 and from April through August 1995, we searched for nests on the Bailey Tract of the Refuge and on the property of the SCCF. Nests were located by actively searching likely nest sites, following birds that appeared to be nesting, or by carefully observing birds that were seen carrying nesting material. Once a nest was located, its contents were noted every 2 to 3 days thereafter until either the nest failed or the young were fledged. If the nest failed, the area was searched for evidence of the cause of failure (animal tracks, punctured eggs, damage to the nest). Nest appearance and mode of disturbance were used to determine the fate of unsuccessful nests. We used the Mayfield method (Mayfield 1975) to determine rate of nesting success for those species for which we located at least 10 nests.

Cowbird censuses. Once per week, we counted cowbird numbers on various areas of Sanibel Island frequented by cowbirds, both on (Wildlife Drive, Shell Mound Trail) and off the Refuge (Lake Murex Estates, East Rocks Subdivision, Rabbit Road, Recreational Center/Elementary School Complex, Beachview Golf Course; Fig. 1). Time spent in each area varied from 30 to 90 minutes, depending upon size of the area. In addition, cowbird observations during the course of other work, including point counts, were noted. These data were used to describe cowbird movements, areas frequented, and an estimate of cowbird numbers on the Refuge and the island.

Results

Point Counts. No cowbirds were recorded during point counts. However, cowbirds were recorded outside the point counts. Data are presented on ten potential host species that were detected during point counts over the course of this study (Table 1). Of these species, only the Northern Cardinal (*Cardinalis cardinalis*) was found in all habitats on the Refuge, while, three species, the Black-whiskered Vireo (*Vireo altiloquus*), Common Yellowthroat (*Geothlypis trichas*), and Eastern Towhee (*Pipilo erythrophthalmus*), were largely or entirely restricted to a single habitat. The remaining six species occurred in a number of habitats, although three of the six occurred in high densities (≥10 pair/40 ha) in only one habitat type. The number of species found in a given habitat ranged from 5 in the red mangrove swamp to 10 in the interior scrub.

Breeding biology. We found 108 active nests of potential host species, but significant sample sizes are available only for the Red-winged Blackbird (*Agelaius phoeniceus*—73 nests), Northern Cardinal (10 nests), and Gray Kingbird (*Tyrannus dominicensis*—12 nests). Only 35 of the 126 nests (27.8%) were successful, and Mayfield nest success estimates were low (Table 2). Predation was the primary cause of nest failure, accounting for 84 of 91 nest failures (92.3%). Seven of 73 (9.6%) Red-winged Blackbird nests failed due to abandonment. We found only 2 parasitized nests, both of Red-winged Blackbirds, suggesting a low impact of cowbird parasitism on the breeding avifauna.

Brown-headed and Shiny cowbirds. Both cowbird species were found primarily in developed areas on the island, although they were also seen in "natural" habitats (Fig. 1). This low observation rate in less

Table 1. Densities (pairs/40 ha) of selected bird species in various habitats on Sanibel Island.

Species	*Spartina* marsh	Interior scrub	Palm forest	Transitional woodland	Mangrove woodland	Mangrove swamp
Gray Kingbird	04.64	*		04.64	05.10	
Great-crested Flycatcher		04.64	04.64	*		05.10
Carolina Wren		10.20	05.10			
White-eyed Vireo	06.50	18.10		04.64	04.64	
Black-whiskered Vireo					*	21.81
Prairie Warbler	*	09.74		04.64	11.60	12.06
Common Yellowthroat	25.06	*				
Red-winged Blackbird	09.28	*			04.64	
Northern Cardinal	*	24.12	22.02	22.38	25.98	22.74
Eastern Towhee		26.45				

*Indicates a species was present at a density of < 4 pairs/40 ha.

Table 2. Breeding biology data for selected bird species on Sanibel Island.

Species	# Nests located	Clutch size	Percent successful	Percent failed	Percent parasitized	Mayfield nest success
Gray Kingbird	12	3.3 (n = 10)	25.0	75.0	0	18.9%
Great Crested Flycatcher	1	4.0 (n = 1)	0	100	0	—
Carolina Wren	1	—	0	100	0	—
White-eyed Vireo	3	3.0 (n = 3)	66.7	33.3	0	—
Black-whiskered Vireo	1	—	0	100	0	—
Prairie Warbler	1	3.0 (n = 1)	100	0	0	—
Common Yellowthroat	1	4.0 (n = 1)	0	100	0	—
Red-winged Blackbird	73	2.7 (n = 56)	36.4	73.6	2.7	30.1%
Northern Cardinal	10	3.0 (n = 8)	70.0	30.0	0	60.9%
Eastern Towhee	5	3.0 (n = 4)	20.0	80.0	0	—

disturbed areas is probably due more to the low numbers of cowbirds on Sanibel, which made detection unlikely away from normal feeding areas. Limited data suggest that a small population is also resident on Captiva Island, and that there may be many cowbirds in agricultural areas on the nearby mainland. During July 1994, we located 6 to 8 pairs of Brown-headed Cowbirds and a pair of Shiny Cowbirds on Sanibel. We regularly saw cowbirds in the Lake Murex estates and the East Rocks subdivision, both less than 1.6 km from the study areas, and on the Beachview Golf Course, 3 km east of the study areas. Individual birds and pairs were often seen on the Rabbit Road bicycle path and along Wildlife Drive on the Refuge (Fig. 1). The largest single group of cowbirds observed included 5 male and 3 female Brown-headed Cowbirds and one male Shiny Cowbird. Brown-headed Cowbirds were heard calling and singing, and were observed courting and mating, indicative of breeding activity. From mid-April through early July 1995 relatively fewer cowbirds were seen on Sanibel Island. At least 2-3 pairs of Brown-headed Cowbirds were seen regularly around East Rocks subdivision and on the softball field (recreation area and elementary school complex) adjacent to the Refuge. Occasionally we saw individuals and pairs along the Wildlife Drive and noted singing, chatter calls, and displays on several occasions, suggesting these birds were breeding.

In July 1997, we again saw Brown-headed Cowbirds along Wildlife Drive (2 males and 2 females), the recreational center/elementary school complex near Refuge headquarters (1 male and 3 females), and the Beachview Golf Course (2 males and 4 females). In all three locations, we observed male cowbirds displaying to females and pairs copulating. We saw a pair of Brown-headed Cowbirds and a pair of Shiny Cowbirds near the Shell Mound Trail on the Refuge.

We were only able to confirm two instances of cowbird parasitism on Sanibel Island. Both involved nests of Red-winged Blackbirds. We note that this host species is the only one for which we obtained a very large sample size of nests, and that other species are probably parasitized. On nearby Captiva Island, a female Prairie Warbler (*Dendroica discolor*) was observed feeding a cowbird young (species unidentified) in June 1997 (Vince McGrath, pers. comm.).

Species Accounts and Host Suitability

Information on cowbird-host interactions in the West Indies and North America (including Florida) allows us to predict the suitability of passerines on Sanibel as cowbird hosts (Cruz et al. 1985; Cruz et al. 1989, 2000; Pranty 2000).

Great Crested Flycatcher (*Myiarchus crinitus*). Great Crested Flycatchers are relatively uncommon on the Refuge, occurring in low densities (4 pairs/40 ha.) in the interior scrub, sabal palm forest, and

red mangrove swamp habitats (Table 1). One active Great Crested Flycatcher nest was located in an old woodpecker hole in a dead sabal palm trunk. The nest contained four eggs when first located on 13 June, but was later predated, possibly by a snake.

Outside of Florida, this flycatcher is infrequently parasitized by Brown-headed Cowbirds; only 12 incidences of parasitism have been reported. Because Brown-headed Cowbirds infrequently parasitize cavity-nesting species, Great Crested Flycatchers are low-suitability hosts for them (Friedmann et al. 1977; Cruz et al. 2000). Shiny Cowbirds, on the other hand, frequently parasitize cavity-nesting species (Friedmann et al. 1977; Cruz et al. 1985; Wiley 1985; Post et al. 1990), including the congeneric Puerto Rican Flycatcher (*M. antillarum*), which has a parasitism rate of 34% (16/47) in Puerto Rico (Cruz et al. 1989; Cruz et al. 2000). We feel that the Great Crested Flycatcher is a potential host on Sanibel Island and other areas of south Florida for the Shiny Cowbird, but possibly of low or marginal suitability for Brown-headed Cowbirds (Table 3).

Gray Kingbird (*Tyrannus dominicensis*). We found Gray Kingbirds in low densities (around 4-5 pairs/40 ha.) in the more open habitats (Table 1). Twelve nests were located in the upper and outer branches of taller trees, and nests were often over water. In ten nests with known clutch size, the mean clutch size was 3.3 eggs (range 3-4). Predation was a major cause of nest failure for Gray Kingbirds, and 9 of 12 (75%) were depredated. The earliest laying date was 3 May and the latest was 27 June. Gray Kingbirds are unlikely to be major hosts for brood parasitism as they are very aggressive and also reject foreign eggs from their nests (Cruz et al. 1985).

Carolina Wren (*Thryothorus ludovicianus*). Carolina Wrens were most abundant in the scrub habitat (10.2 pairs/40 ha.) where heavy understory provided foraging sites. They were also found locally in residential areas and were detected on an irregular basis on the Bailey Tract. A depredated nest was found in a trunk cavity of a sabal palm. The nest was likely depredated by a yellow rat snake (*Elaphe obsoleta*) seen in the area several times. Nowhere is the Carolina Wren a frequent host choice of the Brown-headed Cowbird (Friedmann and Kiff 1985), possibly because of its cavity-nesting habits, although in Illinois, S. Robinson (pers. comm.) found a 15% rate of parasitism. The Shiny Cowbird parasitizes cavity-nesting species in Trinidad, Tobago, and South America, where the House Wren (*Troglodytes aedon*) is a frequent host (Friedmann et al. 1977; Manolis 1982). We feel that Shiny Cowbirds, once established, will have a greater impact on this species than does the Brown-headed Cowbird (Cruz et al. 1999).

White-eyed Vireo (*Vireo griseus*). White-eyed Vireos were most common in the interior scrub, where densities reached 18.1 pairs/40 ha (Table 1). Three White-eyed Vireo nests were located in interior scrub

Table 3. Rankings of 10 potential host species for cowbird brood parasitism and the reasons for those rankings.

Species	Rank	Reasons for ranking	Reported parasitized by[1]	
			Shiny Cowbird	B. H. Cowbird
Northern Cardinal	1	Abundant	No	Yes, high
Red-winged Blackbird	2	Locally common in open habitats	Similar species, High	Yes, low-high
White-eyed Vireo	3	Locally common in many habitats	Similar species, high	Yes, moderate
Prairie Warbler	4	Locally common in many habitats	Similar species, low-high	Yes, moderate
Black-whiskered Vireo	5	Locally abundant in closed habitat	Yes, high	Similar species, moderate
Common Yellowthroat	6	Locally abundant	No	Yes, low-high
Eastern Towhee	7	Locally abundant	No	Yes, low-high
Great Crested Flycatcher	8	Uncommon in closed habitats	Similar species, moderate	Yes, low
Carolina Wren	9	Locally common	No	Yes, low
Gray Kingbird	10	Uncommon, very aggressive	Yes, low	Similar species, low

[1]Data from Friedmann et al. (1977), Friedmann and Kiff (1985), and Cruz et al. (1989). Similar species = species of the same genus as the potential host. Parasitism rates (Low = <10%, Moderate = 10-25%, High = >25%).

habitat on the Bailey Tract and the SCCF property. Each nest contained three eggs, as did several nests found on Sanibel by Harrison (1981). All nests were placed within 1.5 m off of the ground. White-eyed Vireos rank high on our scale of susceptibility to brood parasitism (Table 3) as they are important hosts for the Brown-headed Cowbird (Friedmann and Kiff 1985) and related species have proven vulnerable to Shiny Cowbird parasitism in the West Indies (Cruz et al. 1989). Two instances of parasitism have been reported in north Florida (Stevenson 1963; Stevenson and Anderson 1994). In Pasco County, central Florida, a fledgling cowbird was fed by a White-eyed Vireo (Cruz et al. 1998). In Illinois, White-eyed Vireos continue nesting after cowbirds leave in late July and August, but in Florida they breed from April through July, overlapping the breeding season of both Brown-headed and Shiny cowbirds (Cruz et al. 1989). In Puerto Rico, the closely related Puerto Rican Vireo (*V. latimeri*) is heavily parasitized by the Shiny Cowbird, and we found an 87.2% (34/39) rate of parasitism (Cruz et al. 1998).

Black-whiskered Vireo (*Vireo altiloquus*). We found Black-whiskered Vireos almost exclusively in the red mangrove swamp habitat of the Refuge, where densities were high (Table 1). On the Florida Keys this species also occurs commonly in hardwood hammocks (pers. obs.; Chace et al. 2001), but it is not found in the similar palm forest on Sanibel. We located one vireo nest in the upper branches of a white mangrove on the Bailey Tract. It contained an egg on 2 July but was predated or abandoned soon thereafter. Typical clutches in Florida contain 2 or 3 eggs (Stevenson and Anderson 1994).

In the West Indies, Black-whiskered Vireos are common hosts for Shiny Cowbirds, with rates of parasitism of 88%, 73%, and 35% for St. Lucia, Puerto Rico, and Hispaniola, respectively (Wiley 1985, Cruz et al. 1989, Post et al. 1990, Chace et al. 2001). Vireo clutch sizes were significantly smaller in parasitized than in non-parasitized nests, as was host fledgling success (Cruz et al. 1985, 1998).

In 1989, the first reported incidence of parasitism in Black-whiskered Vireos for North America was recorded (Kale 1989). A vireo was feeding a cowbird fledgling, identified as a Brown-headed Cowbird in Everglades National Park. We predict that in the future cowbird parasitism will become an important threat to the survival of Black-whiskered Vireos in south Florida.

Florida Prairie Warbler (*Dendroica discolor paludicola*). The Florida Prairie Warbler is found in a variety of habitats on the Refuge, but is most abundant in mangroves where densities exceed 10 pairs/40 ha (Table 1). Densities are much lower than those recorded on small keys in Florida Bay, where they may exceed 1 pair/ha (Prather and Cruz 1995, 1996). They are, however, similar to densities in other coastal areas of Florida (Robertson 1955). In contrast to the Florida

Keys, the Prairie Warbler occurs in upland habitats (interior scrub) on Sanibel. At least one pair was breeding on the Bailey Tract.

One Prairie Warbler nest was located during this study. An initial egg was laid on 6 May, the eggs hatched on 18 May, and 3 young fledged on 29 May. In the Florida Keys, nests of this species typically contain 2-4 eggs (avg. 2.86, Prather and Cruz 1995). Incubation lasts 10-15 days, with brooding taking place for an additional 10-15 days (Prather and Cruz 1995).

In a study of the nominate race of the Prairie Warbler in Indiana, Nolan (1978) estimated that parasitism caused about 18% of nest failures of this species. Nolan's study was conducted in what has been generally considered the "original" habitat of the cowbird, where cowbirds and Prairie Warblers have coexisted for many years. Prairie Warblers have been observed feeding fledgling cowbirds in Pinellas and Sarasota counties in southwest Florida (Atherton and Atherton 1988), in Everglades National Park (Kale 1989), and on Captiva Island (in 1990 and 1997, McGrath, pers. comm.). As a common cowbird host, the Prairie Warbler should be carefully monitored (Table 3).

Common Yellowthroat (*Geothlypis trichas*). Common Yellowthroats are abundant in the *Spartina* marsh habitat (25 pairs/40 ha.) and also occur rarely in the interior scrub habitat (Table 1). We located one Common Yellowthroat nest on the Bailey Tract. It contained four eggs when found on 25 June 25, but was predated soon after the young hatched on 3 July. This nest, as is typical for the species, was built just above ground level. In Illinois, frequency of nest parasitism on this species ranged from 16.7% to 75%, in Ohio 46.3%, and in Michigan 38.8% (Friedmann 1963, Graber et al. 1983, Cruz et al. 1998). In 1987, a fledgling Brown-headed Cowbird being fed by a Common Yellowthroat was observed in Pasco County, central Florida (Cruz et al. 1998). We feel that this species will be a common cowbird host (Table 3).

Florida Red-winged Blackbird (*Agelaius phoeniceus mearnsi*). Red-winged blackbirds, found in several habitats on Sanibel Island (Table 1), are most abundant around ponds and canals, such as on the Bailey Tract where 15-20 pairs breed. When the *Spartina* marsh habitat was flooded after heavy rains, the density of blackbirds in that habitat approached 13 pairs/ha; the density was about 6 pairs/ha when the marshes were dry.

Redwings build open nests in cattails and outer branches of shrubs, particularly wax myrtle and saltbush, near water. We located 73 Red-winged Blackbird nests. Clutch size ranged from 2-4 eggs (mean = 2.7 eggs; n = 56 nests; Prather and Cruz, in review). A parasitized Red-winged Blackbird nest on the Bailey Tract in 1993 contained one cowbird egg and two blackbird eggs; one on Sanibel in 1994 contained one cowbird and two host nestlings (Cruz et al. 1998, 2000).

Predation is a major cause of nest failure for Red-winged Blackbirds on Sanibel, with 43 of the 73 nests (58.9%) being predated. Experiments showed that redwings on Sanibel were very aggressive toward cowbird and host models placed near the nest, which may help reduce the overall rate of predation and brood parasitism (Prather et al. 1999).

Outside of Florida, the incidence of Brown-headed Cowbird parasitism on redwings has been reported to be as low as 1.6% (Brown and Goetz 1978) and as high as 54% (Hergenrader 1962; Cruz et al. 1998, 2000). In Seminole County, central Florida, a Red-winged Blackbird fed an immature cowbird in 1989; near Florida City, south Florida, a Red-winged Blackbird was observed feeding a fledgling Shiny Cowbird (identified by vocalization) in 1991 (Cruz et al. 1998, 2000). Despite their abundance, Red-winged Blackbirds should be monitored. We rank this species as a very likely cowbird host (Table 3).

Northern Cardinal (*Cardinalis cardinalis*). The Northern Cardinal is the most abundant bird on Sanibel (Table 1) with densities greater than 1 pair per 2 ha in all habitats except *Spartina*. They are common in residential areas. At least 6 pairs nest on the Bailey Tract. Cardinals were observed feeding cowbirds near Pensacola (Escambia Co.) in 1959, and in Washington County in 1987 (Stevenson 1959; Cruz et al. 1998), and on Pine Island (Lee Co.) and Corkscrew (Collier Co.) in south Florida (Cruz et al. 1998). The Northern Cardinal should be monitored as a likely common cowbird host (Table 3).

Eastern (White-eyed) Towhee (*Pipilo erythropthalmus leucophrys*). The Eastern Towhee is restricted primarily to scrub habitat on Sanibel, where it occurs in high densities (26.5 pairs/40 ha) (Table 1). Towhees seem to require areas with extensive leaf litter and shrubs, and were rarely observed away from areas of low, thick vegetation. Six to eight pairs nest on the Bailey Tract. Eastern Towhees nest in low thick shrubs, where the nest is well concealed. All nests found were within 2 m of the ground. Five nests found each contained 3 eggs.

Friedmann (1971) reported 327 cases of parasitism of towhees and categorized them as frequently rearing cowbirds. Of the 29 host species recorded in the Carolinas, the one most frequently reported is the Eastern Towhee (Cruz et al. 1998). In Gainesville, north-central Florida, an immature Brown-headed Cowbird was fed by a female towhee in July 1980, and in Hernando County, central Florida, a towhee nest with a cowbird eggs was found in 1990 (Cruz et al. 1998). We feel that towhees will be an important cowbird host in Florida (Table 3).

Discussion

While our study provides baseline data on the biology of cowbird host species on the Refuge and Sanibel Island, much needs to be learned. Additional data on breeding biology, particularly of the less

common species, will help detect future changes in breeding success caused by brood parasitism. Continued studies of breeding biology may help to determine why nest predation rates are high for some species, and whether it represents a threat to some of breeding bird populations. Potential nest predators such as raccoon (*Procyon lotor*), Fish Crow (*Corvus ossifragus*), grackles (*Quiscalus* spp.), yellow rat snake, and black racer (*Coluber constrictor*) are common on Sanibel.

Due to the current small numbers of cowbirds on Sanibel, we believe that the incidence of parasitism is low and cowbirds do not appear to pose a threat to the breeding bird community. We found only two parasitized nests, although small numbers of cowbirds were observed on a regular basis. Reports of cowbirds breeding in south Florida are increasing (Hoffman and Woolfenden 1986; Cruz et al. 1998, 2000; Pranty 2000), and some species on Sanibel (e.g., White-eyed Vireo, Black-whiskered Vireo, Prairie Warbler, Northern Cardinal, Rufous-sided Towhee) are parasitized in other parts of their range. We feel that cowbird parasitism poses a potential threat and that these species ought to be monitored.

The Brown-headed Cowbird is an uncommon breeding resident on Sanibel, but has been reported from both coastal and inland areas in south Florida (Cruz et al. 1998). Although they have been recorded year-round, numbers are augmented from mid-summer with the arrival of post-breeding flocks from areas north of Florida (Cruz et al. 1998).

At present, Shiny Cowbirds are uncommon on Sanibel. As most records of Shiny Cowbirds for North America have been recorded from coastal areas (Cruz et al. 1998), we believe that this species will continue to expand its range on Sanibel and other coastal regions of Florida

We recommend continued studies on the distribution and status of cowbird populations on Sanibel and in south Florida. Data on the presence of defense strategies such as egg rejection, nest attentiveness, and aggressiveness of host species may help determine how vulnerable they are to brood parasitism.

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FIRST BREEDING RECORD OF THE DICKCISSEL IN FLORIDA

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The Dickcissel (*Spiza americana*) occurs regularly in Florida as a spring and fall migrant and as a winter resident. Prior to 1999, dates of occurrence ranged from 4 August to 18 May, with one "out of season" report at a feeder in Franklin County on 13 July 1974 (Stevenson and Anderson 1994:621). We report the discovery of breeding Dickcissels at Lake Apopka North Shore Restoration Area, Orange County, Florida, in June and July 1999. Thirteen male Dickcissels were observed, most in song (Fig. 1). At least five were paired and we discovered two nests and a female feeding fledglings.

The 5485-ha Lake Apopka North Shore Restoration Area (LANSRA) in Lake and Orange counties was informally known as the "Zellwood muck farms" before purchase by the St. Johns River Water Management District in 1998 and 1999. The primary purpose of public acquisition was to reduce phosphorus loading into Lake Apopka by removing the fields from agricultural production. In late summer and early fall 1998, more than 2000 ha of fields were under water, and the fields remained flooded for several months. An unexpected consequence of the flooding was a die-off of large fish-eating birds beginning in November 1998 (Pranty and Basili 1999). More than 500 birds died on-site, and preliminary analysis by the U.S. Fish and Wildlife Service (1999) indicated that the cause of the mortality was exposure to organochlorine pesticides. To prevent additional bird mortality, all fields were drained by late February 1999, and they remained unflooded through May 2002. By early summer 1999, these fallow fields had acquired a dense growth of vegetation such as dogfennel (*Eupatorium capillifolium*), pigweed (*Amaranthus* sp.), groundsel tree (*Baccharis halimifolia*), and, in places, cattails (*Typha* sp.). By June 1999, some vegetation in these fields exceeded 3 m in height.

Since August 1998, Robinson has conducted twice-weekly bird surveys of the eastern portion of LANSRA (n = 381 through 27 May 2002),

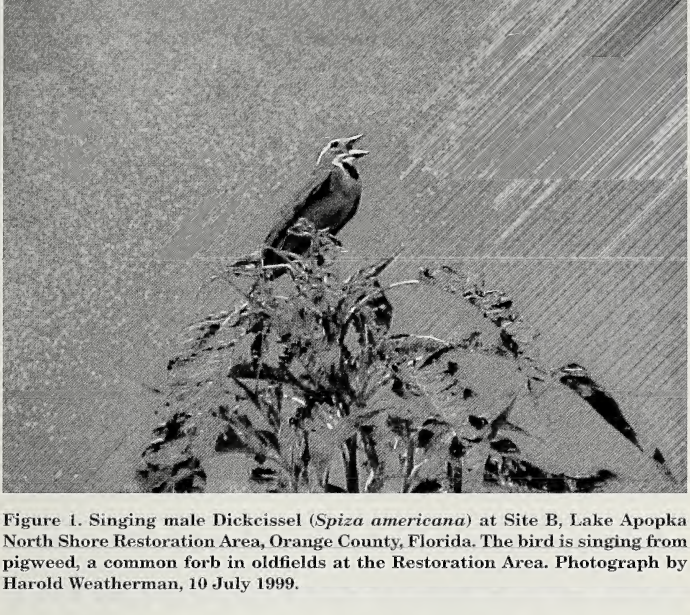

Figure 1. Singing male Dickcissel (*Spiza americana*) at Site B, Lake Apopka North Shore Restoration Area, Orange County, Florida. The bird is singing from pigweed, a common forb in oldfields at the Restoration Area. Photograph by Harold Weatherman, 10 July 1999.

especially those areas known as Unit 1 and Unit 2. Surveys were conducted by car and on foot and covered all accessible areas (i.e., roads, dikes, and mowed areas around ditches). Surveys began from the same point around dawn, and most concluded at dusk. Observations were made with Zeiss 10×, 40 binoculars and a Kowa TSN-4 telescope. Robinson's surveys revealed that Dickcissels (sex ratios unknown) wintered in at least three locations at LANSRA in 1998-1999, but none was found between 2 October 1999 and 30 April 2000. Singing male Dickcissels were discovered in the summers of 1999 and 2000, but we searched their territories for evidence of females and breeding activity in only 1999. Below, we describe locations, numbers, and breeding behaviors of Dickcissels observed at LANSRA, and briefly relate habitat characteristics where Dickcissels were found during the breeding seasons in 1999. Sites are designated A through E and are arranged chronologically.

Site A.—One pair of Dickcissels, with the male in song, was in a fallow field north of Lust Road on 31 May. This area was mowed within a few days, and the birds were not seen there again.

Site B.—Two singing males were in a fallow field southwest of Site A on 12 June, and a third male was found on 19 June. Females accompanied two of the males on 25 June, but no conclusive evidence of nesting was found. A female was in each territory on 26 June, while the males sang vigorously throughout the morning. During our observations, Pair 1 copulated, the female of Pair 2 chipped occasionally in response to our presence, and the female of Pair 3 carried nesting material (dried grass) three times into an area of dense forbs. After a careful search of this area on 5 July, we discovered the nest, but it was abandoned and neither adult was present. H. Weatherman (pers. comm.) watched the female of Pair 2 carry nesting material on 10 July, but did not find the nest.

Site C.—Two singing male Dickcissels were just south of Lust Road on 25 June. The following day, a third singing male was found, accompanied by a female that carried nesting material. After watching this pair for about an hour, we found their nest. It was built about 1 m above the ground in a 1.3 m-tall composite, and consisted of an incomplete, unlined basket of dried grass. By 5 July, considerable material had been added to the nest, but it was abandoned. We found the male (not singing) on territory, but not the female. Between 29 June and 16 July, we counted nine singing male Dickcissels in an area of about 60 ha between Lust Road and Hooper Farms Road. A singing male at Site C on 16 July was the final observation that suggested breeding of Dickcissels at LANSRA in 1999.

Site D.—A family of Dickcissels, consisting of a non-singing male, a female, and two fledglings, was found along Hooper Farms Road on 29 June. The female fed the young.

Site E.—In 2000, fields at Sites A-D, all in Unit 2, were heavily overgrown and no Dickcissels were found. However, we found Dickcissels in oldfields southeast of Interceptor Road in Unit 1. This site was 4.5-6.7 km northwest of the 1999 sites. We found eight singing males and one female between 30 April and 9 June 2000, but no Dickcissels were observed after the latter date.

Prior to our observations, Dickcissels had not been reported to breed in Florida (Robertson and Woolfenden 1992, Stevenson and Anderson 1994). However, Stevenson and Anderson (1994) suggested that Dickcissels be sought in large grain fields in northern Santa Rosa and Escambia counties in late May and early June. On 12 May 1965, Stevenson (*in* Stevenson and Anderson 1994:621) collected a female Dickcissel with a "shelled egg ready to lay" near Foley, Alabama, about 40 km west of Pensacola, Florida. On 25 June 1989, a pair of Dickcissels carrying food for young was found at Morgan, Calhoun County, Georgia, the southernmost breeding location in that state (McNair 1990). The straight-line distances from Lake Apopka, Florida, to Morgan, Georgia, is about 430 km, and to Foley, Alabama, is about 615 km.

Dickcissels are known to sporadically invade areas outside their traditional breeding range, and to attempt reproduction when conditions are suitable (Fretwell 1986). At LANSRA, the large oldfield habitat created by the drawdown was consistent with Dickcissel breeding preference (Zimmerman 1982). Because of this unique behavior of Dickcissels, observers should be alert for additional sporadic breeding attempts in large oldfields throughout much of Florida. A recent observation supports this conclusion: a male Dickcissel was found at Holey Land Wildlife Management Area, Palm Beach County, Florida, on 29 July 2001. It uttered "guttural 'clicks' while lightly pumping its tail" (D. LaPuma et al. *in* Pranty 2002), behavior that suggested a breeding bird (Basili, pers. obs.).

In summary, we confirmed breeding of Dickcissels in oldfield habitats at Lake Apopka North Shore Restoration Area, Orange County, Florida, in 1999, and obtained additional breeding season information in 2000. At least five of 13 males found in 1999 were paired, and the female of one pair fed two fledglings. We discovered abandoned nests in two other territories, a fourth female that carried nesting material, and a fifth pair that was observed copulating.

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NOTES

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EASTERN GLASS LIZARD AS PROBABLE PREY OF GREAT EGRETS

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The Great Egret (*Ardea alba*) is an opportunistic forager, taking mainly fish but also consuming invertebrates, amphibians, reptiles, and occasionally birds and mammals (see review by McCrimmon et al. 2001). It uses feeding sites that range from marine-estuarine to freshwater dominated habitats. Egrets are primarily diurnal feeders and use mainly slow, stalking foraging techniques (Rodgers 1983). In this note we report a previously unreported prey species.

On 13 September 2001 we were capturing nestling Great Egrets at a small mixed-species waterbird colony in Port Richey, Pasco County, Florida for radio instrumentation. Also nesting at the site were Little Blue Herons (*Egretta caerulea*), Cattle Egrets (*Bubulcus ibis*), and Anhingas (*Anhinga anhinga*). All nests were located in baldcypress (*Taxodium distichum*) flooded to a depth of about 1-2 m. The colony was in a water-retention site behind a strip mall adjacent to US 19.

When attempting to capture one of two 4-week-old Great Egret nestlings, we noticed two eastern glass lizards (*Ophisaurus ventralis*) draped over branches about 20-40 cm below the edge of the egret nest, which was about 3.5 m above the water. During the capture procedure, one of the glass lizards fell into the water. However, we collected the other glass lizard for examination. This glass lizard was 47.8 cm in total length and 14.8 cm in snout-vent length. The specimen had 26 puncture marks from near the head to just past the vent, indicative of pecking by the parent or nestling egrets. We estimated the lizard had been dead two to three days.

Eastern glass lizards are a common species near wetlands and moist soils (P. Moler, pers. comm.). Parent Great Egrets are not known to carry food in the bill prior to regurgitating prey items to their young. Whereas, glass lizards may be a more common prey of egrets than this one report suggests, these two glass lizards beneath the nest suggest that the nestlings either had difficulty ingesting the lizards or did not find the prey suitable to eat.

Acknowledgments.—We thank Paul Moler for identifying the species of glass lizard. Mike Delany, Jeff Gore, Ted Davis, and Jerry Jackson reviewed and provided comments on earlier drafts of the manuscript. This work was part of a study by the Bureau of Wildlife Diversity Conservation of the Florida Fish and Wildlife Conservation Commission supported through the Nongame Trust Fund.

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AGONISTIC BEHAVIOR IN THE SWALLOW-TAILED KITE

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The Swallow-tailed Kite (*Elanoides forficatus*) is an uncommon to fairly common visitor to wetland habitat of central Florida (Stevenson and Anderson 1994). This species is easily recognized by its deeply forked tail and habit of soaring above the treetops (Kale et al. 1990). Nests are often constructed in the tops of tall pines (Meyer 1995) making them fairly difficult to find (pers. obs.). Swallow-tailed Kites often make agonistic threats toward other predatory birds, but this behavior rarely results in contact (Meyer 1995). The following agonistic behavioral observations were made within Wekiwa Springs State Park, Orange County, Florida.

On 8 May 2001, while Alexis Suazo and I surveyed an area infested with southern pine beetles (*Dendroctonus frontalis*) that was going to be cut, we saw a Swallow-tailed Kite landing in a nest (nest one) atop a tall loblolly pine (*Pinus taeda*). The kites' nest location was determined with a Global Positioning System (GPS) unit and the tree was marked. On 10 May 2001 we made another trip to the site to begin cutting trees infested with southern pine beetles. On that trip park ranger Joe Sutter observed a kite fly to a different nest (nest two) 111 m north of nest one. At 07:30 on 24 May 2001 I made a final trip to the nests before a timber crew was to begin work in the area. While standing under the kites' nest tree, I heard a loud swooshing sound from directly over-head. Looking up I noticed a kite diving through the pine canopy. I thought the kite was attempting to scare me away; however, after a few seconds I saw a Red-shouldered Hawk (*Buteo lineatus*) leave the pine and fly to another loblolly approximately 20 m away. During the hawk's flight from the first perch to the second, the kite dove and hit the hawk in the back, grazing the left side of its body. The hawk landed while the kite continued circling it. After only a few seconds the hawk flew to a tree approximately 50 m. away. During that flight the kite attempted to strike the hawk again, however it appeared to miss. The hawk landed in a large pond pine (*Pinus serotina*) and the kite circled it and then started vocalizing loudly. This vocalization can be described as a *klee klee klee* call (as described by Meyer 1995). After one or two minutes of circling and vocalizing, seven other kites came from all directions and circled with the original bird. They all circled and called for nearly 20 minutes and then gradually dispersed.

On 24 May 2001 a timber contractor began removing trees infested with southern pine beetles from the area where the kite nests were found. The kites' nest trees and a dozen surrounding trees (approximately 20 m in radius for each nest) were saved and the kites did not abandon the nests. However, by approximately 10 June both nests appeared abandoned. Since no intensive surveys were done solely for Swallow-tailed Kites after 24 May, suggesting an outcome for the nesting pair or fledglings would be speculative.

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LONG DISPERSAL OF A RED-COCKADED WOODPECKER IN CENTRAL FLORIDA

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The Red-cockaded Woodpecker (*Picoides borealis*) is a cooperatively breeding bird that lives in family groups, or clusters, in mature pine forests of the southeastern coastal plain and piedmont. Generally, a Red-cockaded Woodpecker disperses a short distance to pair with a bird at a neighboring cluster. A long-distance dispersal of 90 km was reported in North Carolina (Walters et al. 1988) and seven shorter dispersals over 36 km were reported in Texas, Oklahoma, and Arkansas (Conner et al. 1997).

On 15 March 2002, an 86 km southwestward dispersal of a female Red-cockaded Woodpecker was confirmed in central Florida. This bird traversed large areas of unsuitable habitat, including highways, water, and urban development. The bird was from the Ocala National Forest's Paisley Woods subpopulation and moved to west of Inverness in the Citrus Tract of the Withlacoochee State Forest. The natal cluster, 267-7 was in Lake County northeast of Lake Dorr in banding block 290-0813 (29.02°N, 081.59°W). The bird was a breeder for one or two years at 267-5 (29.02°N, 081.57°W), a cluster 2 km east of the natal cluster, before dispersing to cluster 21 in the northeastern part of the Citrus Tract in banding block 284-0822 (28.75°N, 082.40°W). On 15 April 2002, she was incubating a clutch of three eggs in Citrus cluster 21.

This bird was banded as a nestling on 11 May 1995 in a drilled artificial cavity. Her father was a local bird. Her mother was translocated 28 November 1990 from Apalachicola National Forest in order to augment the local single male.

This bird dispersed about 2 km from her natal cluster to a neighboring cluster where she was first recorded on 8 November 1995. Her status was uncertain. She and her elder sister, hatching year 1992, were in the cluster through nesting season 1996, having replaced the female who was there in nesting season 1995. The Citrus Tract bird may have been the breeding female, a helper, or a persistent competitor with her elder sister. Based on the age of the birds, fifth-year versus second-year, the most likely assumption may be that the Citrus Tract bird was a female helper. In 1997, the Citrus Tract female may safely be assumed the breeder. She was incubating on 13 May and was the only female in the cluster. When the nest was checked again on 20 May, it had failed. There was no renesting. There was no nesting in 1998, although the behavior of the male and a new female on 2 June suggested the formation of a pair bond, and this pair nested successfully in 1999.

The Citrus Tract female was not seen in the Ocala National Forest after summer 1997. She may have spent some months or years floating and looking for a breeding opportunity within the Ocala population. It is not known how long it took her to arrive at the Citrus Tract, or what her reproductive success has been since arriving there.

In 1997, Paisley had three occupied clusters and Salt Springs Island, the nearest Ocala National Forest subpopulation, had four occupied clusters. The Salt Springs Island clusters are 35-40 km north of the Paisley clusters. There are two known cases of dispersals between the Salt Springs Island and Paisley subpopulations. The breeding male at 267-1 (the father of the current male at this cluster) was from Salt Springs Island. A hatching-year 1992 sister of the Citrus Tract bird dispersed from Paisley to Salt Springs Island in 1993, but was unsuccessful in acquiring breeding status.

Within the Ocala National Forest population, 14 km northward dispersals of females from Salt Springs Island to the Riverside Island subpopulation occur frequently. In 2001, four of Riverside Island's nine nesting females had been banded in Salt Springs.

The Central Florida dispersal has several factors in common with the case documented by Walters et al. (1988). Both birds were breeding females that dispersed from small populations following a nest failure, presumably in search of a new breeding opportunity. In both cases distances to the nearest occupied cluster were great, and the birds crossed unsuitable habitat. The length of the dispersals was probably because neither female found suitable occupied habitat closer, in the direction chosen.

This dispersal illustrates the potential for genetic exchange between distant populations of Red-cockaded Woodpeckers, which is magnified when translocated birds or their offspring leave the recipient site. The successful nesting of the Citrus Tract female, the offspring of an Ocala male and an Apalachicola female, has introduced genomes from both sites into the Citrus Tract subpopulation.

Distances were calculated from the hypotenuse of triangles composed of N-S distance calculated by 111.325 km * latitude differences in degrees, and E-W distance calculated by cos(average of latitudes) * 111.325 km * longitude differences in degrees (Kirven 1997).

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FLORIDA'S NEW METHOD OF EVALUATING RARE SPECIES: A REPORT BY THE CONSERVATION COMMITTEE OF THE FLORIDA ORNITHOLOGICAL SOCIETY WITH EMPHASIS ON A PROPOSED RECLASSIFICATION OF THE RED-COCKADED WOODPECKER

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Use of quantitative variables to classify and rank rare species has been a low-profile area of research in the U.S. Quantitative measures of rarity have been used as part of several planning efforts (Niemi 1984; Masters 1991; Millsap et al. 1990; Sparrowe and Wight 1978), and while Millsap et al. (1990) warn such measures are "ever imperfect" and "incapable of replacing human judgment," quantitative procedures have proven useful to organizations making important decisions on the allocation of limited staff time and money.

Regulations adopted recently by the Florida Fish and Wildlife Conservation Commission (FFWCC) have moved quantitative approaches outside the theoretical realm of planning into the controversial realm of law. In 1999, FFWCC established new criteria for evaluating rare species (Florida Administrative Code Rule 68A-27.0012) based on specific measures of population size, range extent, population decline, and other variables (Appendix 1). This was the first case in the U.S. where quantitative measures were incorporated into laws affecting rare species, and the new criteria are now important in issues ranging from management of state-owned lands to the review of permits for large-scale developments. FFWCC's new regulations also have important implications if responsibilities for rare species shift from federal to state governments (George et al. 1998).

Recent applications of the new FFWCC criteria to Red-cockaded Woodpecker (*Picoides borealis*) and Florida manatee (*Trichechus manatus laterostris*) have drawn criticisms from conservation and scientific organizations. In both cases, FFWCC proposed reclassification to a lower category of endangerment, and critics argued the change could lower protection offered these species. This report reviews the new FFWCC procedures (FFWCC 2001) with special attention to the proposed reclassification of Red-cockaded Woodpecker. Because FFWCC criteria were adopted from procedures used by World Conservation Union (IUCN) to develop the Red List of imperiled species (IUCN 2001), some of the criticisms we discuss apply to this process as well.

As detailed below, FFWCC's approach could be an important improvement to the management of rare species in Florida, but the new quantitative criteria are flawed because they fail to (1) gauge extinction risks adequately among species with diverse life-history traits, (2) consider variables thought to be important to the conservation of rare populations and habitats (e.g., Carrol et al. 1996; Kautz and Cox 2001), and (3) give appropriate weighting to Florida populations because the quantitative criteria are based on global statistics (Gärdenfors et al. 2001). The Conservation Committee of the Florida Ornithological Society urges FFWCC to suspend its consideration of all reclassifications until these problems are addressed.

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The New Process

Impetus for a new process emerged in the early 1990s. At the time, definitions for imperiled species (Table 1) contained three qualitative categories: *endangered* (highest category), *threatened*, and *species of special concern* (lowest category). A proposal to reclassify the White Ibis (*Eudocimus albus*) as a *species of special concern* in 1993 drew criticism from development and agricultural interests. These groups lobbied the state legislature, which soon threatened to ". . . slash the agency's budget and warned that classifying the White Ibis would decimate the state's economy" (*St. Petersburg Times*, Dec. 9, 2001). The proposed classification proceeded, but a virtual freeze on the listing process occurred for several years.

FFWCC evaluated their legal definitions during this interim and concluded the categories of endangerment could not be distinguished (B. Millsap, pers. comm.). The agency created an 11-member working group to evaluate the existing process and recommend improvements. This group, which included representatives from timber, agriculture, and development industries as well as conservation organizations and state agencies, drafted new procedures adopted by FFWCC in June 1999. Although information on the new procedures was distributed prior to adoption, many biologists learned of the criteria only after the criteria had become law (i.e., as the biologists were asked to comment on reclassifications proposed under the new law; FFWCC 2002).

The new two-stage process (FFWCC 2001) begins with a petition for a change in status. If a petition is deemed sufficient, FFWCC prepares an assessment to determine if any criteria (Appendix 1) are satisfied. All data used in the assessment are based on global population statistics, not statistics for Florida. If a single criterion in Appendix 1 is satisfied, FFWCC develops a management plan to address the conservation needs of the species. The key procedural elements (assessment and management plan) undergo internal and external reviews, and both elements must be approved before a reclassification takes place. Three categories of endangerment still exist (*species of special concern*, *threatened*, and *endangered*), but FFWCC essentially has modified IUCN criteria for *critically endangered*, *endangered*, and *vulnerable* (IUCN 2001) and changed the names to *endangered*, *threatened*, and *species of special concern*, respectively (Table 1).

Species on the old list ($n = 117$) are maintained at their positions until a petition initiates a status review. As of May 2002, four species had entered the new process: Panama City crayfish (*Procambarus econfinae*), flatwoods salamander (*Ambystoma cingulatum*), Red-cockaded Woodpecker, and Florida manatee. A draft petition to list gopher tortoise (*Gopherus polyphemus*) as *threatened* was undergoing review (B. Millsap, pers. comm.).

Reclassification of the Red-cockaded Woodpecker

FFWCC (Gruver 2001) submitted a petition to reclassify Red-cockaded Woodpecker from *threatened* to *species of special concern* in July 2001. The Red-cockaded Woodpecker requires mature, open pinewoods (Hooper et al. 1980) and has undergone an estimated 97% reduction in range during the past two centuries (U.S. Fish and Wildlife Service 2000). The global population consists of approximately 14,000 adults (U.S. Fish and Wildlife Service 2000), and Florida supports the largest population among states (>4,000 individuals; U.S. Fish and Wildlife Service 2000).

Gruver (2001) suggested Red-cockaded Woodpeckers met none of the new criteria under the *threatened* category and went on to contend (Gruver 2001: page 3) the species ". . . might warrant removal from the state list altogether." This statement was based on an analysis suggesting the population had declined only by 3% over the past 20 years (equivalent to 3 generation lengths in this species; see Appendix 1). As reviewers pointed out (FFWCC 2002), Gruver (2001) had not calculated trends correctly. However,

Table 1. Categories of endangerment as defined by older Florida Statutes (left column), the new Florida Fish and Wildlife Conservation Commission procedures (1999), and the World Conservation Union (IUCN 2001).

Definitions in Florida Statutes and a Former Definition for Species of Special Concern	Definitions Provided in New Florida Fish and Wildlife Conservation Commission Procedures	IUCN Definitions
Endangered: any species...whose prospects of survival are in jeopardy due to modification or loss of habitat (and other factors).	*Endangered:* a species, subspecies, or isolated population of a species or subspecies which is so few or depleted in number or so restricted in range or habitat due to any man-made or natural factors that it is in imminent danger of extinction.	*Critically Endangered:* a taxon that is facing an extremely high risk of extinction in the wild in the immediate future.
Threatened: any species . . . which may not be in immediate danger of extinction, but which exists in such small populations as to become endangered if it is subjected to increased stress. . . .	*Threatened:* a species, subspecies, or isolated population of a species or subspecies which is facing a very high risk of extinction in the future.	*Endangered:* a taxon that is facing a very high risk of extinction in the wild in the near future.
Species of Special Concern: includes species that (1) have significant vulnerability, (2) may meet criteria for *threatened* but data are lacking; (3) if they decline could affect other species; (4) have not recovered from past declines; or (5) have been introduced for specific objectives.	*Species of Special Concern:* a species, subspecies, or isolated population of a species or subspecies which is facing a moderate risk of extinction in the future.	*Vulnerable:* a taxon that is not *Critically Endangered* or *Endangered* but is facing a high risk of extinction in the wild in the medium-term future.
		Lower Risk: a taxon that does not satisfy above criteria; separated into three subcategories of (1) *Conservation Dependent* (could qualify for *Vulnerable*), (2) *Near Threatened* (does not qualify for *Conservation Dependent* but close to *Vulnerable*), and (3) *Least Concern* (does not qualify for above categories).

the final biological assessment (FFWCC 2002) concluded the species warranted listing because it *might* undergo a population decline of at least 20% over the next 20 years (satisfying criterion 76(a) for listing as a *species of special concern*). Quoting from the final assessment:

> *. . . it is conceivable that the range-wide Red-cockaded Woodpecker population could decline by at least 23% over the next 20 years. Approximately 1,296 active clusters currently occur on private lands (U.S. Fish and Wildlife Service, unpublished data). . . . Approximately 45% of these clusters are on properties where some type of conservation agreement is in place (U.S. Fish and Wildlife Service, unpublished data); however, because landowner participation is mostly voluntary, the clusters protected by these agreements are not necessarily secure. . . .Given historic and recent rates of habitat loss, it is not unreasonable to expect that most, if not all, mature pine habitat on private lands large enough to support a Red-cockaded Woodpecker population could disappear within the next 20 years. In addition, if existing management efforts were reduced on public lands, there undoubtedly would be a loss of active clusters and/or populations due to a decline in the species' area of occupancy, extent of occurrence, or quality of habitat. Finally, because both Letcher et al. (1998) and Walters et al. (In Press) assumed optimum habitat conditions in their analyses, the population declines we calculated from their models must be regarded as best-case scenarios given that poor habitat quality is a common problem on many properties where Red-cockaded Woodpeckers occur. Taking all this into consideration, we believe it is likely that the range-wide population of Red-cockaded Woodpeckers could undergo a decline of at least 20% over the next 20 years and conclude that the species warrants listing as a species of special concern under this criterion.*

The justification for maintaining the Red-cockaded Woodpecker on Florida's list of imperiled species was not overwhelming. In fact, groups opposed to the listing of this species could use FFWCC's new criteria and the biological assessment to make a strong claim to remove the species from the state list altogether, as Gruver (2001) originally suggested. FFWCC described its confidence in the projected declines only as "moderate" (FFWCC 2002: page 99) because the projections were based on population models sensitive to the environmental and spatial considerations (Cox and Engstrom 2001, Letcher et al. 1998). For example, when FFWCC (2002) used results from one population model (Letcher et al. 1998), projected declines were >20% over 20 years; however, when another model was used (Walters et al., in press), projected declines were <12% over 20 years. The justification also suggested pronounced losses will occur on private lands even though a recent survey of the largest population on private lands (Cox et al. 2001) did not find it declining precipitously; meanwhile, two private properties have successfully reintroduced woodpeckers (G. Hagen and J. Stober, pers. comm.). Furthermore, although there have been declines on many public lands (James et al. 1995), increases also have occurred in response to intensive management efforts (e.g., artificial cavity construction and translocation). Some of these increases will likely continue into the near future (U.S. Fish and Wildlife Service 2001).

An implicit statement in FFWCC's justification is that the Red-cockaded Woodpecker will warrant listing only as long as population declines continue. More specifically, losses must average about 140 individuals per year (>55 active clusters) over the next 20 years, and the species must eventually decline to just over 11,000 individuals by 2022 to satisfy the criterion for listing as a *species of special concern*. If population estimates obtained five years hence show declines to be less severe than predicted, the species could be removed from Florida's list through the submission of a new petition (FFWCC 2002: page 30). In fact, the new criteria make it possible for this species to con-

tinue to decline slowly (<20% over 20 years) and potentially not be eligible for listing until only 1,000 individuals remain rangewide (Appendix 1).

In contrast, the draft federal recovery plan (U.S. Fish and Wildlife Service 2001) established specific population goals based on a more detailed assessment of population viability. The federal plan considers the species eligible for reclassification once there are (a) 10 populations with 350 potential breeding groups distributed among 13 core populations; (b) 10 populations with 250 potential breeding groups distributed among 12 secondary populations; and (c) several small populations conserved at peripheral locations in south and central Florida, northeastern North Carolina, and southeastern Virginia (U.S. Fish and Wildlife Service 2001). The federal plan strives for a higher standard to ensure population viability over meaningful periods of time (Shaffer 1981, U.S. Fish and Wildlife Service 2001) and envisions a total population of approximately 17,000 individuals distributed among >7,000 territorial groups.

Population declines are only one of the criteria considered in FFWCC's new process, but the Red-cockaded Woodpecker generally cannot satisfy other FFWCC criteria for *endangered* or *threatened* until the total population is much smaller than a *single* recovery population (400-500 active territories) as envisioned under the federal recovery plan (U.S. Fish and Wildlife Service 2001). For example, to qualify as an *endangered* species under criterion 26b where occupied area is <4 mi^2, the range-wide population of woodpeckers would be only 10-20 groups (using estimated territory sizes of 50-100 ha). FFWCC criterion 26c is not satisfied until the total global population becomes less than half the size of a single federal recovery population (i.e., 250 individuals versus 350 potential breeding groups) and the population is declining (25% over 3 years). FFWCC criteria 26e and 77e consider extinction probabilities (20-50% chance of extinction within 20 years) that will not be met until the species consists of a single population with <50 territorial groups (Letcher et al. 1998).

FFWCC's criteria for population declines are meant to assess the global extinction risk (FFWCC 2001), but population trends for several birds suggest the criteria do not provide appropriate measures of extinction risks across all species. Breeding Bird Survey data (Sauer et al. 2002) show 31 species (Table 2) with average annual declines exceeding 2.5% (i.e., >20% decline over 10 years, the minimum needed for listing). The list includes species such as the Red-headed Woodpecker (*Melanerpes erythrocephalus*) and Yellow-billed Cuckoo (*Coccyzus americanus*) whose populations are orders of magnitude larger than those of the Red-cockaded Woodpecker. However, if the criteria are dutifully applied, these and other common species (Table 2) should be listed at the same level of endangerment as Red-cockaded Woodpecker. A key feature missing from the FFWCC criteria is consideration for historic losses. Species like Red-cockaded Woodpecker that have experienced >97% declines (U.S. Fish and Wildlife Service 2001) and still are declining slowly should be listed at a higher level of endangerment than common species experiencing declines.

FFWCC methods for computing population declines also may fail to assess extinction risks accurately in another manner. Criterion A (Appendix 1) states population declines shall be considered over ". . . 10 years or 3 generations, whichever is greater. . . ." This criterion is influenced by the estimated generation length, which can be calculated using several different procedures (Tanner 1978). For Red-cockaded Woodpeckers, FFWCC equated three generations to 20 years (Gruver 2001), but in the case of the gopher tortoise, which has an estimated generation length of 18 (Cox et al. 1987) to 33 years (P. Moler, pers. comm.), three generations equate to 55-100 years (variation attributable to different methods of calculation). Gopher tortoises thus may decline at an average annual rate of only 0.02% and satisfy the criterion for *species of special concern*, but the Red-cockaded Woodpecker must decline at an average annual rate of approximately 1.2%, which is 60-times higher. The gopher tortoise almost qualifies for the *endangered* category if it declines at an average annual rate of 1.2%.

Table 2. Species exhibiting average annual declines >2.5% (i.e., >20% decline over 10 years) on Breeding Bird Survey routes in North America (Sauer et al. 2002). This annual decline is the minimum needed to satisfy FFWCC criteria for listing as *species of special concern*. FFWCC estimates declines over 3 generation lengths or 10 years, whichever is greater, so other species with longer life spans could qualify.

Common Name	Scientific Name	Trend 1980-2000	Routes (N)
Horned Grebe	*Podiceps auritus*	-4.6	67
Least Bittern	*Ixobrychus exilis*	-3.9	24
Red-breasted Merganser	*Mergus serrator*	-5.6	14
Northern Bobwhite	*Colinus virginianus*	-3.8	1359
King Rail	*Rallus elegans*	-7.8	28
Purple Gallinule	*Poryphyrula martinica*	-4.8	14
Lesser Yellowlegs	*Tringa flavipes*	-18.3	26
Solitary Sandpiper	*Tringa solitaria*	-7.3	8
Herring Gull	*Larus argentatus*	-3.1	288
Gull-billed Tern	*Sterna nilotica*	-6.5	13
Common Tern	*Sterna hirundo*	-3.9	73
Black-billed Cuckoo	*Coccyzus erythropthalamus*	-3.6	949
Yellow-billed Cuckoo	*Coccyzus americanus*	-2.9	1591
Groove-billed Ani	*Crotophaga sulcirostris*	-5.7	15
Barn Owl	*Tyto alba*	-14.9	27
Eastern Screech-Owl	*Otus asio*	-3.7	67
Common Nighthawk	*Chordeiles minor*	-3.3	1321
Vaux's Swift	*Chaetura vauxi*	-3.6	133
Red-headed Woodpecker	*Melanerpes erythrocephalus*	-4.6	1064
Sprague's Pipit	*Anthus spragueii*	-3.6	112
Tennessee Warbler	*Vermivora peregrina*	-5.5	257
Bay-breasted Warbler	*Dendroica castanea*	-7	148
Blackpoll Warbler	*Dendroica striata*	-10.9	49
Connecticut Warbler	*Oporornis agilis*	-3.1	71
Canada Warbler	*Wilsonia canadensis*	-3.2	394
Henslow's Sparrow	*Ammodramus henslowii*	-6.9	88
Bobolink	*Dolichonyx oryzivorus*	-3.2	1101
Eastern Meadowlark	*Sturnella magna*	-3.1	1872
Rusty Blackbird	*Euphagus carolinus*	-9.1	54
Pine Siskin	*Carduelis pinus*	-2.8	740
House Sparrow	*Passer domesticus*	-3.9	2820

FFWCC's range criteria (e.g., occupied area < 4 mi^2; Appendix 1) are most applicable to invertebrates (FFWCC does not regulate plants) as seen in the petition submitted for Panama City crayfish (Keppner 2001). This crayfish will likely be listed as *threatened* or *endangered* (P. Moler, pers. comm.) because the range encompasses 10,400 ha (40 $miles^2$), only 22 populations are known, and each population occupies <0.75 ha. Populations are associated with roadside swales, power line rights-of-way, railroad ditches, and thinned commercial timber stands (Keppner 2001).

Although species with restricted ranges must receive attention, many conservationists consider also the important ecological roles that certain species play. The *Ecological Society of America* (Carrol et al. 1996) proposed that species chosen for listing should (1)

benefit a number of other species, (2) provide important ecological roles, (3) have the capacity for recovery, and (4) be taxonomically distinct. The Red-cockaded Woodpecker would likely rank much higher than the Panama City crayfish if quantitative measures for these variables were developed. The Red-cockaded Woodpecker inhabits mature, open pinewoods that rank as some of the most imperiled communities in North America (Noss et al. 1999); the species has large area requirements such that a single territory encompasses the area used by dozens of rare species; and the species has low dispersal capabilities, meaning that issues of habitat fragmentation and population dispersion need to be considered carefully. Interestingly, the definition of *species of special concern* used formerly by FFWCC (Table 1) included recognition for species that played important ecological roles.

Another area of concern lies in the treatment of taxonomic divisions and sub-populations. The FFWCC (2001) procedures state that units

> ". . . considered for listing actions are full species and certain subspecies and geographically distinct populations. Generally, subspecies will be considered for listing actions only if they can be easily identified in the field using a combination of morphological characteristics and geographic location. Geographically distinct populations must be clearly isolated from the main body of the species' range (i.e., allopatric), and such isolation must have occurred sufficiently long ago for genetic or morphological differentiation to be expected."

This differs from the federal perspective, which allows consideration of isolated populations that have not differentiated to a similar degree.

Florida's remaining woodpecker populations have become fragmented to the point that natural exchange is uncommon (Cox et al. 1995), however isolation has not been sufficient for substantial genetic differentiation to occur among populations (Haig et al. 1994). Still, the draft federal recovery plan (U.S. Fish and Wildlife Service 2001) emphasized conservation of woodpecker populations in south and central Florida in part because special genetic, ecological, and phenotypic differences existed (Delotelle et al. 1987; Mengel and Jackson 1977; Stangel et al. 1992).

Arguments based on the special qualities of isolated populations of woodpeckers may seem subjective, but FFWCC's working definitions for allopatric populations and subspecies also are subjective to some degree because they are influenced by prevailing philosophies in taxonomy (e.g., Frost and Hillis 1990; Haffer 1997). Florida currently contains proportionately fewer subspecies of birds than reptiles, amphibians, and mammals (Millsap et al. 1990) in part because a trend in avian taxonomy has been to lump subspecies in situations where clinal variation exists (American Ornithologists' Union 1983). Florida currently contains proportionately fewer subspecies of birds than reptiles, amphibians, and mammals (Millsap et al. 1990) in part because a trend in avian taxonomy has been to lump subspecies in situations where clinal variation exists (American Ornithologists' Union 1983). some subspecies of amphibians, reptiles, and mammals have been lumped in recent years, but the broad consolidations made by the American Ornithologists' Union (1983) have not taken place in other classes, and this may have an important bearing on FFWCC's new system. For example, the diamondback terrapin (*Malaclemys terrapin*) exhibits extensive morphological variation throughout its range and has been subdivided into seven recognized subspecies (Collins 1997). Three subspecies occur in Florida along the Atlantic coast (*M. t. tequesta*), in the Florida Keys (*M. t. rhizophoraruum*), and along the Gulf coast (*M. t. macrospilota*). All three subspecies scored as high as the Red-cockaded Woodpecker in a quantitative assessment of rarity performed by Millsap et al. (1990) because statistics were computed for each subspecies, not the global population. Similar to the new FFWCC regulations, Millsap et al. (1990) considered subspecies that could ". . . be easily identified in the field using a combination of morphological characteristics and geographic location." Recent analyses of terra-

pin genetics (Lamb and Avise 1992) and morphology (Hartsell 2001) raise questions about some subspecific designations, and, at the least, it seems possible that variation among terrapins is no more substantial than variation found among some birds once represented by two or more subspecies in Florida. For example, subspecies of Eastern Towhee (*Pipilo erythrophthalmus*) in Florida have distinctive bill shapes and iris colors (Dickinson 1952) that would allow separation in the field.

More significantly, FFWCC's treatment of isolated populations is inconsistent with recent IUCN recommendations (Gärdenfors et al. 2001) because FFWCC scores are based on global population statistics, not population statistics for Florida. IUCN (Gärdenfors et al. 2001) defined regional populations as "geographically or otherwise distinct groups in the population between which there is little demographic or genetic exchange (typically one successful migrant . . . per year)." Florida's regional woodpecker populations satisfy this definition even with various translocation efforts that are underway. IUCN then recommended that, when its criteria were applied to isolated populations within a regional political boundary such as Florida, ". . . all data used . . .—such as the number of individuals and variables relating to area, reduction, decline, fluctuations, sub-populations, locations, and fragmentation—should be from the regional population, not the global population." To conform with IUCN, FFWCC should be using Florida population statistics, not global population statistics, in cases where isolation is evident.

FFWCC's method for dealing with isolated populations also could affect listing status of another important isolated population: the Florida panther (*Puma concolor coryii*). O'Brien et al. (1990) contended there was no genetic differentiation among subspecies of cougar in North America, and cougars from Texas (*P. c. stanleyana*) have been introduced to Florida during the past five years to counter the effects of inbreeding (Land et al. 2001). Genetic introgression has been extensive with at least 36 progeny now derived from Texas cougars and their subsequent offspring (Land et al. 2001). The south Florida population of cougar is no longer clearly isolated, and some fear a strong case can be made to remove Florida panther from FFWCC's list (D. Maehr, pers. comm.).

Finally, FFWCC's new procedures do not consider inequalities in the habitat that conservation lands provide for rare species. A recent FFWCC analysis of Landsat imagery (Kautz and Cox 2001) suggested public lands in Florida contained sufficient habitat to ensure the long-term survival of gopher tortoise, but not enough to ensure survival of Red-cockaded Woodpecker. Gopher tortoises occur in many disturbed habitats (Cox et al. 1987, Diemer 1984), have home ranges a small fraction that of a single territorial group of woodpeckers, and are capable of persisting on public lands <200 ha (Cox et al. 1987). If gopher tortoise is classified as *threatened* while Red-cockaded Woodpecker is classified only as *species of special concern*, FFWCC's list will distort the amount of habitat and population security that public lands provide these species.

Does Reclassification Matter?

FFWCC (2001) notes an important aspect of its new process is the separation of regulatory and management actions from the position a taxon holds on the state's list. The decoupling allows FFWCC to tailor regulations and conservation efforts to each species. Stated another way, reclassification of Red-cockaded Woodpecker could be unimportant as long as an effective management plan is developed. Such a management plan must be in place prior to reclassification to *species of special concern*, but a management plan is not explicitly required once a species moves off the Florida list (i.e., the species is no longer defined as a *candidate species*; see FFWCC 1999). Thus, Florida's management plan for Red-cockaded Woodpecker may be in effect only as long as the species declines, not necessarily until it has recovered using the federal criteria.

Distinguishing between the position a species holds on the list and the conservation attention it receives follows IUCN recommendations (IUCN 2001), but the position held

on FFWCC's previous list did not influence regulations or management significantly. Similar prohibitions were assigned to all categories of endangerment, and there was little direct relationship between the position a species held and management efforts. The gopher tortoise was listed as *species of special concern* previously, yet, because tortoise populations occurred frequently on proposed development sites, FFWCC developed special habitat conservation guidelines (Cox et al. 1987) and a system of habitat mitigation banks (M. Allen, pers. comm.) to conserve tortoise habitat. The agency also undertook special research projects concerning tortoises (e.g., Diemer 1984). In contrast, efforts undertaken for indigo snake (*Drymarchon corais couperi*), Red-cockaded Woodpecker, and several *threatened* species were much less extensive.

The emphasis placed on management plans should benefit many rare species, but it also begs a question of why establish different categories of endangerment? If the details lie in the management plans, all reclassifications are unimportant so long as a single criterion under *species of special concern* is satisfied. Furthermore, because some of the more controversial issues FFWCC has faced recently arose from proposed reclassifications (e.g., Red-cockaded Woodpecker and Florida manatee), a one-tiered program could save staff time otherwise spent formulating and defending controversial reclassifications.

The relative risk of endangerment of course needs to be considered when deciding how to spend limited management funds, and a one-tiered system that lumped species close to extinction with those that were less imperiled might not be efficient. As the list of management plans grows, competition for limited management funds will also increase and relative endangerment will need to be considered in deciding where to focus efforts. The general public also might have difficulties understanding the esoteric logic of a one-tiered system. The terms "endangered," "threatened," and "species of special concern" convey clear meanings to some Floridians or else controversy over the proposed reclassification of Red-cockaded Woodpecker would not have occurred. Many biologists do not want the perceived statuses of Red-cockaded Woodpecker and Florida manatee to be lowered until Federal recovery goals are achieved.

Unfortunately, public perceptions on the status of Red-cockaded Woodpeckers may already have changed. A lead sentence in a recent newspaper story (*Tallahassee Democrat*, 14 January 2002) read: "Red-cockaded Woodpeckers on the Apalachicola National Forest may not know it yet, but the State of Florida no longer considers them threatened." Another story (*St. Petersburg Times*, 9 December 2001) stated ". . . the Fish and Wildlife Conservation Commission has agreed to consider lowering the protected status of . . . the Red-cockaded Woodpecker. . . ."

The perception of lowered protection (or improved status) is not limited to public press. Personnel with the Florida Department of Forestry, Georgia Department of Natural Resources, Treasure Coast Regional Planning Council (comprising three Florida counties), South Florida Water Management District, and U.S. Fish and Wildlife Service expressed concerns that a reclassification of Red-cockaded Woodpecker implied the status had improved and this might affect their abilities to conserve or manage habitat for this species (FFWCC 2002). Concerns of other agencies need to be considered more fully by FFWCC since the cooperation of these agencies is required for effective management.

Finally, although concerns over perceptions and definitions may seem semantic, the specific definitions that FFWCC elected to adopt from IUCN represents a special question of semantics with important consequences for the whole process. IUCN (2001) provided definitions for several categories of endangerment (*critically endangered*, *endangered*, *vulnerable*, and *lower risk*, which has three subcategories; Table 1), not just the three definitions used by FFWCC. FFWCC chose the IUCN definition of *critically endangered* to serve as its category of *endangered*, but FFWCC might instead have adopted the IUCN definition for *endangered* as its definition of *endangered* (rather than equating this category with *threatened*) since there was no clear connection between ex-

isting Florida law and the definitions used by IUCN (Table 1). Had FFWCC chosen the IUCN category of *endangered* as its own definition of *endangered*, clear distinctions among categories would still exist, criteria would still be quantitative, and language suggesting an "endangered" species must face a 50:50 risk of extinction within 10 years would be avoided (Appendix 1).

Summary.—For the Red-cockaded Woodpecker to remain on Florida's list of imperiled species, it must continue to decline at a high rate. If it stabilizes or declines slowly, FFWCC's new criteria could allow a species that is critically important to conservation of mature southern pine forests (Jackson 1995) to be de-listed well before it is considered "recovered" by the federal government. Moreover, a de-listing in Florida might occur at the same time common species like Red-headed Woodpecker, Northern Bobwhite (*Colinus virginianus*), and Yellow-billed Cuckoo are added to the list (Table 2). FFWCC's new system may soon rank the gopher tortoise at a higher level of endangerment than Red-cockaded Woodpecker even though tortoise populations are probably an order of magnitude larger than woodpecker populations, tortoise population declines have not been as extensive, habitat for tortoises is well represented within Florida's conservation lands, and FFWCC already expends considerable effort to manage this species. The new FFWCC system can be applied to recognized subspecies that exchange genes across a broad geographic area, but it can not be applied to recently isolated populations within Florida that exhibit ecological differences (not to mention important educational value). Finally, other governmental agencies warn a reclassification of this important species could hamper their abilities to conserve and manage woodpecker habitat.

Use of quantitative measures in the legal classification of rare species represents a new and potentially valuable approach, but no one should expect such an approach to be error free during the early going. To help improve the process, FFWCC should reconvene the original 11-member group to consider some of the problems outlined here. The 11-member group and FFWCC should consider recommendations of Carrol et al. (1996), which consider the important ecological roles some species provide, Gärdenfors et al. (2001), which discuss application of IUCN criteria to regional populations, and Kautz and Cox (2001), which consider the protection offered rare species by public conservation lands. Proposed changes to the law should be subjected to extensive peer review, and it would be especially helpful if FFWCC prepared a publication showing which categories various species might be placed in by the new process. These procedures could help to create a system that estimated relative endangerment fairly and quantitatively and, as important, with much less controversy.

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Appendix 1.

Section A. New criteria used to define *endangered*, *threatened* and *species of special concern* in Florida (FFWCC 1999). Older definitions are listed in Section B below.

(26) Endangered species—As designated by the Commission, a species, subspecies, or isolated population of a species or subspecies which is so few or depleted in number or so restricted in range or habitat due to any man-made or natural factors that it is in imminent danger of extinction as determined by (a), (b), (c), (d) or (e) below:

(a) Population reduction in the form of either:

1. An observed, estimated, inferred or suspected reduction of at least 80% over the previous ten years or three generations, whichever is longer, based on, and specifying, any of the following:
   a. Direct observation
   b. An index of abundance appropriate for the species
   c. A decline in area of occupancy, extent of occurrence or quality of habitat
   d. Actual or potential levels of exploitation
   e. The effects of introduced species, hybridization, pathogens, pollutants, competitors or parasites
2. A reduction of at least 80%, projected or suspected to be met within the next ten years or three generations, whichever is longer, based on, and specifying, any of 1.b., 1.c., 1.d. or 1.e. above.

(b) Extent of occurrence estimated to be less than 40 square miles or area of occupancy estimated to be less than 4 square miles, and estimates indicating any two of the following:

1. Severity fragmented or known to exist at only a single location.
2. Continuing decline, observed, inferred or projected, in any of the following:
   a. Extent of occurrence
   b. Area of occupancy
   c. Area, extent and/or quality of habitat
   d. Number of locations or subpopulations
   e. Number of mature individuals
3. Extreme fluctuations in any of the following:
   a. Extent of occurrence
   b. Area of occupancy
   c. Number of locations or subpopulations
   d. Number of mature individuals

(c) Population estimated to number fewer than 250 mature individuals and either:

1. An estimated continuing decline of at least 25% within three years or one generation, whichever is longer, or
2. A continuing decline, observed, projected or inferred, in numbers of mature individuals and population structure in the form of either:
   a. Severe fragmentation (that is, no subpopulation estimated to contain more than 50 mature individuals).
   b. All individuals are in a single subpopulation.

(d) Population estimated to number less than 50 mature individuals.

(e) Quantitative analysis showing the probability of extinction in the wild is at least 50% within ten years or three generations, whichever is longer.

(73) Species of special concern—As designated by the Commission, a species, subspecies, or isolated population of a species or subspecies which is facing a moderate risk of extinction in the future, as determined by (a), (b), (c), (d) or (e) below:

(a) Population reduction in the form of either:

1. An observed, estimated, inferred or suspected reduction of at least 20% over the last ten years or three generations, whichever is longer, based on, and specifying, any of the following:
   a. Direct observation
   b. An index of abundance appropriate for the species
   c. A decline in area of occupancy, extent of occurrence and/or quality of habitat
   d. Actual or potential levels of exploitation
   e. The effects of introduced species, hybridization, pathogens, pollutants, competitors or parasites
2. A reduction of at least 20%, projected or suspected to be met within the next ten years or three generations, whichever is longer, based on, and specifying, any of 1.b., 1.c., 1.d. or 1.e. above.

(b) Extent of occurrence estimated to be less than 7,700 square miles or area of occupancy estimated to be less than 770 square miles, and estimates indicating any two of the following:

1. Severely fragmented or known to exist at only a single location.
2. Continuing decline, observed, inferred or projected, in any of the following:
   a. Extent of occurrence
   b. Area of occupancy
   c. Area, extent and/or quality of habitat
   d. Number of locations or subpopulations
   e. Number of mature individuals
3. Extreme fluctuations in any of the following:
   a. Extent of occurrence
   b. Area of occupancy
   c. Number of locations or subpopulations
   d. Number of mature individuals

(c) Population estimated to number fewer than 10,000 mature individuals and either:

1. An estimated continuing decline of at least 10% within ten years or three generations, whichever is longer; or
2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:
   a. Severely fragmented (i.e., no subpopulation estimated to contain more than 1,000 mature individuals).
   b. All individuals are in a single subpopulation.

(d) Population very small or restricted in the form of either of the following:

1. Population estimated to number fewer than 1,000 mature individuals
2. Population is characterized by an acute restriction in its area of occupancy (less than 40 square miles) or in the number of locations (fewer than 5)

(e) Quantitative analysis showing the probability of extinction in the wild is at least 10% within 100 years.

(77) Threatened species—As designated by the Commission, a species, subspecies, or isolated population of a species or subspecies which is facing a very high risk of extinction in the future, as determined by (a), (b), (c), (d) or (e) below:

(a) Population reduction in the form of either of the following:

1. An observed, estimated, inferred, or suspected reduction of at least 50% over the last ten years or three generations, whichever is longer, based on, and specifying, any of the following:
   a. Direct observation
   b. An index of abundance appropriate for the species
   c. A decline in area of occupancy, extent of occurrence and/or quality of habitat
   d. Actual or potential levels of exploitation
   e. The effects of introduced species, hybridization, pathogens, pollutants, competitors or parasites
2. A reduction of at least 50%, projected or suspected to be met within the next ten years or three generations, whichever is longer, based on, and specifying, any of 1.b., 1.c., 1.d. or 1.e. above.

(b) Extent of occurrence estimated to be less than 2,000 square miles or area of occupancy estimated to be less than 200 square miles, and estimates indicating any two of the following:

1. Severely fragmented or known to exist at no more than five locations
2. Continuing decline, observed, inferred or projected, in any of the following:
   a. Extent of occurrence
   b. Area of occupancy
   c. Area, extent and/or quality of habitat
   d. Number of locations or subpopulations
   e. Number of mature individuals
3. Extreme fluctuations in any of the following:
   a. Extent of occurrence
   b. Area of occupancy
   c. Number of locations or subpopulations
   d. Number of mature individuals

(c) Population estimated to number fewer than 2,500 mature individuals and either:

1. An estimated continuing decline of at least 20% within five years or two generations, whichever is longer; or
2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:
   a. Severely fragmented (i.e., no subpopulation estimated to contain more than 250 mature individuals)
   b. All individuals are in a single subpopulation.
   Population estimated to number fewer than 250 mature individuals.
   Quantitative analysis showing the probability of extinction in the wild is at least 20% within 20 years or five generations, whichever is longer.

Section B. Definitions in the Endangered Species Act in Florida (Florida Statutes 372.072).

(3)(b) "Endangered species" means any species of fish and wildlife naturally occurring in Florida, whose prospects of survival are in jeopardy due to modification or loss of habitat; overutilization for commercial, sporting, scientific, or educational purposes; disease; predation; inadequacy of regulatory mechanisms; or other natural or man-made factors affecting its continued existence.

(3)(c) "Threatened species" means any species of fish and wildlife naturally occurring in Florida which may not be in immediate danger of extinction, but which exists in such small populations as to become endangered if it is subjected to increased stress as a result of further modification of its environment.

A list of Species of Special Concern was established that included species with one or more of these characteristics.

(1) Has a significant vulnerability to habitat modification, environmental alteration, human disturbance, or human exploitation which, in the foreseeable future, may result in its becoming a threatened species unless appropriate protective or management techniques are initiated or maintained.

(2) May already meet certain criteria for designation as a threatened species but for which conclusive data are limited or lacking.

(3) May occupy such an unusually vital or essential ecological niche that should it decline significantly in numbers or distribution other species would be adversely affected to a significant degree.

(4) Has not sufficiently recovered from past population depletion.

(5) Occurs as a population either intentionally introduced or being experimentally managed to attain specific objectives. The species of special concern prohibitions in rule Florida Administrative Code 39-27.002(4) shall not apply to species so designated, provided that the intentional killing, attempting to kill, possession or sale of such species is prohibited.

REVIEWS

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Hummingbirds of North America.—Steve N. G. Howell. 2002. Hummingbirds of North America. The Photographic Guide. Academic Press Natural World, San Diego, California. 219 pages. $29.95. ISBN 0-12-356955-9.—There are over 300 species of hummingbirds, all confined to the Americas. Twenty-four of them have been found in the United States (14 breed regularly) and are described in detail in this beautifully produced little book. The author, Steve N. G. Howell, has had extensive experience with these and other birds and is recognized for his writing on field identification problems (e.g., as in Howell, S. N. G. and S. Webb, 1995, A guide to the birds of Mexico and northern Central America. Oxford Univ. Press. Oxford.). The goal of this new book is "to provide identification criteria that, given good views of a bird, should allow you to identify the majority of individuals." I applaud the author's attitude that "responsible field identification always includes the ability to 'let birds get away' as unidentified." Hummingbirds, especially, cannot all be identified in the field. Some species are very similar in appearance and their diagnostic characters difficult to see in a free-flying bird (or even when the bird is held in the hand). Views of hummingbirds are often fleeting glimpses of a flying bird and rarely does one have the opportunity to study or photograph it adequately. Accounts include all verified Florida species, plus the Cuban Emerald. Accounts are not provided for the Antillean Crested and Rufous-tailed hummingbirds.

This book will enable identification of many hummingbirds that would remain questionable if one depended upon previous field guides, including the new volumes by Kaufman and Sibley. But the greatest benefits from this book will come only after intensive study of its contents before tackling birds in the field. A 34-page introductory section provides a clear review of hummingbird characteristics and is essential reading for effective use of the book. It is concisely written and well illustrated. A brief "box" introduces each genus. Each species account includes an identification summary and sections on taxonomy, status and distribution, range, structure, similar species, voice and sounds, habitat, behavior, molt, description of each sex and age, hybrids, and references. Sections on sounds and behavior are not illustrated, but they are adequate as an aid in distinguishing species. Molt sequence and its timing are particularly useful in identifying hummingbirds and Howell has done a good job in using them as tools. Each species account is illustrated with 4 to 12 photographs; a few paintings by Sophie Webb are used where photographs were not available (as for the Bee Hummingbird). How effective are these photographs? In general, they are excellent, but in a number the accompanying text emphasizes features that I was unable to see, perhaps because of the loss of resolution in printing. Photograph 18.9 of an immature male Anna's Hummingbird is used to point out advanced primary molt, but this will require study and imagination; this is but one of a number of illustrations that don't quite provide the details cited in the accompanying caption. Some captions are misleading, e.g., in Pic.17.7 it indicates the bird is an immature Black-chinned, based in part on a "relatively long tail." The immature male Black-chinned Hummingbirds that we banded in Arizona had shorter tails than either immature or adult females. But if the reader studies all photographs carefully, the exercise will serve to emphasize the important criteria and lead to an increased awareness of these features on birds in the field. Occasionally there is a disclaimer, such as "apparent white is reflected light" as in the amount of white in the tips of the rectrices (Pic. 12.1, 12.2, 12.5). This points out the hazards and difficulties associated with the interpretation of photographs used to document critical records.

Howell prepares the birder to automatically look at certain useful field characters, e.g., ". . . is the tail long, short, forked, cleft, notched, squared, graduated, double-rounded?" He defines all of these terms and others, but the time to become acquainted

with them is not when the hummingbird is pausing briefly as it forages in flowering *Cordia seetina* (Geiger trees). Many of the characters are relative ones: is the outer wing tip narrow and tapered (as in a Ruby-throat) or is it broad and blunt (as in a Black-chinned)? Is the tail weakly or strongly graduated? Is there a relatively short tail projection beyond the primaries? Good photographs or excellent views in the field are essential for the interpretation of many of these characters. Rufous and Allen's are the two species most likely to pose identification problems; Howell admonishes the birder to begin by determining the age and sex of the bird in question. But he does not clearly describe how to do this; the information is there but one must dig it out and organize it. As I read through this book, I often wished that it provided a table of all characters and compared them among species. The book will even help you identify adult males when the lighting results in an all black gorget.

There are a few points in this book that disturb me. Hummingbirds have grooved tongues, not tubular ones as stated on page 1. Bill length is given for each species, but the method to obtain it is not explained; most species are described as having a bill of medium length, including both Allen's (bill 17-21 mm) and Green-breasted Mango (bill 24-30 mm). Howell does not always follow scientific names in the American Ornithologists' Union Check-list (which he misspells as "Checklist"). He advocates the use of "Sheartail" for the Bahama Woodstar and Lucifer Hummingbird, with good arguments. The book was well edited and the few typos are not misleading (except that on page 28, line 3, the reference should be 19, not 17). Howell introduces the term "splodges" to American birders; I had to go to the Oxford English Dictionary to establish that such a word exists. It is more or less synonymous with "splotches." It was not easy to locate the Figures scattered through the book, but the "Pics" (photographs) were keyed to species accounts and readily found.

Who needs this book? It will be essential to anyone who wishes to identify as many individual hummingbirds in the field as possible. It will be essential to those who attempt to identify species from photographs. It will be very helpful to those who wish to raise their hummingbird identification skills to a level above that possible using the new Sibley guide. Certainly all institutional libraries should acquire it. I wish that I had this book years ago, when I felt that I could identify every hummingbird that I saw in the southwestern US; it would have saved me from many mistakes. Only when I started banding as a tool for studying hummingbirds did I learn that identification of hand-held birds could be challenging and free-flying birds impossible. I rapidly learned to say "I don't know," even of birds a few inches away at feeders. This book will be a welcome resource for many who enjoy the challenge of hummingbird identification. **Stephen M. Russell**, Dept. of Ecology and Evolutionary Biology, University of Arizona, Tucson (current mailing address: 2850 N. Camino de Oeste, Tucson, AZ 85745).

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The Cuban Treefrog in Florida: Life History of a Successful Colonizing Species.—Walter E. Meshaka, Jr. 2001. University Press of Florida, Gainesville, Florida 32611-2079. 191 pp. $69.95 cloth.—The introduction of exotic species can have substantial effects on native flora and fauna. For example, the brown tree snake (*Boiga irregularis*) was introduced to the island of Guam in the mid 1900s and by the late 1900s 9 of 12 native forest birds, 6 of 12 lizards, and 2 of 3 bats were extinct (Fritts and Rodda 1998). Many other instances exist of declines and extinctions of native flora and fauna associated with the introduction of exotic species to islands and continents (Western and Pearl 1989).

The state of Florida is particularly prone to the introduction and establishment of exotic species. As of 1997, 108 exotic species of vertebrates had established populations in Florida: 35 freshwater fishes, 4 amphibians, 32 reptiles, 11 birds, and 26 mammals (Butterfield et al. 1997; Courtenay 1997; James 1997; Layne 1997). This book examines the successful spread of one such exotic, the Cuban treefrog (*Osteopilus septentrionalis*), through southern and central Florida. The author describes the biology of the Cuban treefrog in Florida to determine if it has the characteristics shared by many other successful, invasive exotic species. These characteristics include 1) high fecundity, 2) short generation times, 3) ability to function in a wide range of physical conditions, 4) similar habitats in native and introduced ranges, 5) coexistence with humans, 6) broad diet, 7) open niche space, 8) superior competitive ability, 9) predator-free space, and 10) body size larger than closest relatives.

The book begins with three brief chapters outlining the objectives, discussing the evolutionary history and geographic distribution of Cuban treefrogs, and introducing the main study area (Everglades National Park). Chapter four covers the general methods used to collect and analyze data. The biology of the Cuban treefrog is examined in chapters 5-11, with most emphasis on diet and reproduction. Chapter 12 is a summary of those natural history characteristics that make the Cuban treefrog a successful exotic. The book concludes with two very brief chapters projecting the future of Cuban treefrogs in Florida and, specifically, in the Everglades.

The strength of the book is in chapters 5 to 11, which cover the natural history and ecology of Cuban treefrogs, with some interesting results. For instance, the breeding activity of Cuban treefrogs was unusually high immediately following Hurricane Andrew (23-24 August 1992), demonstrating a link between reproduction and rainfall, but also suggesting that the timing of reproduction is plastic enough to exploit rare environmental conditions that may favor breeding. The author also provides comparisons of the abundance of Cuban treefrogs and native species of treefrogs, demonstrating that in some cases as Cuban treefrogs become more abundant, native species of treefrogs decline. Such data are critical for assessing the impact of an exotic species on native frog populations.

Placing the natural history of the Cuban treefrog in context with the ecological characteristics that typify successful exotics is more difficult. Evaluating these characteristics requires that they be compared to species that compete with Cuban treefrogs. The author makes these comparisons by using the green treefrog (*Hyla cinerea*), squirrel treefrog (*Hyla squirella*), wood slave (*Hemidactylus mabouia*) and indo-pacific gecko (*Hemidactylus garnotii*). However, the criteria for consideration as a competitor are not presented. Other species also may be significant competitors; certain spiders might have significant dietary overlap with Cuban treefrogs. Also, the data available for these potential competitors are generally weaker than those for Cuban treefrogs. For example, the author demonstrates that Cuban treefrogs mature in less than one year but it isn't clear if this is any more rapid than for competitors, all of which also mature within a year. Nonetheless, the natural history data on Cuban treefrogs is quite valuable and at least suggests that they share many of the ten ecological characteristics of successful exotic species.

The main weakness of the book is the organization and writing style. The text generally reads like a dissertation rather than a book, not too surprising given that the information is based on a dissertation (Meshaka 1994). The introductory and concluding chapters are very cursory and the text is probably more technical than necessary. In order to understand information presented in chapters 5-11 the reader often must refer back to earlier chapters, particularly chapters 1 and 4, because it is not always clear which of the various ecological characteristics is being evaluated in a particular chapter. The book is data rich but has too many figures and tables. For example, chapter 9 (diet) is 45 pages, but only 14 are text. The chapter includes 29 tables and 24 figures. Much of the information presented in tables and figures is not adequately discussed in the text or the terminology may be inconsistent. For example, tables (9.2-9.9) on the breadth of diet list prey species by scientific Family name, but the text uses primarily common names. The text states that many Cuban treefrogs eat roaches and cites tables 9.2-9.3, but without knowing the Family of roaches the reader won't be able to understand this point just from the tables.

The writing style is awkward; too many commas decreases the readability and scientific jargon limits the audience. For instance, on p. 140 Cuban treefrogs are referred to as "batrachophagous" whereas it seems more appropriate to just say that they eat frogs.

Although the emphasis of the book is on evaluating the success of Cuban treefrogs in Florida, a couple of interesting comparative opportunities are missed. Another exotic amphibian in Florida is the marine toad (*Bufo marinus*), also called the cane toad, a species well known for its detrimental impact on the native fauna of Australia after its introduction there. In Florida the Cuban treefrog has a larger geographic range than the marine toad, suggesting that it has been the more successful of the two. Comparisons of the characteristics of these two species would have been quite informative.

The geographic distribution of the Cuban treefrog (fig. 2.1) is presented primarily as a closed, shaded polygon rather than as dots representing specific localities, surprising given that specific localities are listed in table 2.1. A graphical depiction of established populations in Florida would indicate if they really occur throughout the southern and central portion of the state, or if they occur mainly near human-occupied areas. Furthermore, arranging localities by date of observation might allow inferences about the spread of Cuban treefrogs. Has the range expansion been a steady progression from south to north or instead more sporadic indicating many instances of introduction?

In summary, the author presents important information on an exotic species that has become established in Florida. The ideas presented in this book likely will stimulate future research on this and other exotic species in the state. The price seems excessive given the narrow focus of the book, especially given that the only photos are black and white images of field sites. Surprisingly, the only picture of a Cuban treefrog in the entire book is on the cover. The book is not written for a general audience. However, I do recommend this book to anyone interested in exotic species, particularly in Florida.—**Kyle G. Ashton**, Archbold Biological Station, 123 Main Dr., Venus, Florida 33960.

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FIELD OBSERVATIONS

Fall report: August-November 2001.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Submissions to the FOC are sought, and should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December-February), spring (March-May), summer (June-July), and fall (August-November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers are found at the end of this report. We greatly prefer observations sent via e-mail.

Sight-only observations are considered "reports" while only those supported by verifiable evidence (photographs, video or audio tapes, or specimens) are called "records." Species for which documentation is required by the FOS Records Committee (FOSRC; Bowman 2000, Fla. Field Nat. 28:149-160) are marked with an asterisk (*); we do not include FOSRC review species submitted to us without details. A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations used are: CP = county park, ENP-E = Everglades National Park (*Miami-Dade*) ENP-W = Everglades National Park (*Monroe*), EOS = end of season, FDCP = Fort De Soto CP (*Pinellas*), FWBSTF = Fort Walton Beach STF (*Okaloosa*), LARA = Lake Apopka Restoration Area (*Orange*), NWR = national wildlife refuge, PPM = *Polk* phosphate mines, SP = state park, SRA = state recreation area, STF = sewage treatment facility, and N, S, E, W etc., for compass directions. Bold-faced species denote birds newly reported or verified in Florida, or record counts.

Summary of the Fall Season

Above-average rainfall nearly statewide helped to ease the drought somewhat. Tropical Storm Gabrielle made landfall near Venice early 14 Sep and moved across the Peninsula, exiting N of Daytona Beach just before midnight. Predictably, there were observations of coastal species inland, and several large counts of terns in the Jacksonville area 15-16 Sep. Strong E winds in Sep and Oct apparently contributed to above-average numbers of Blackpoll and Bay-breasted warblers along the southern Atlantic coast. Also found in that region were several pelagic species driven ashore after the passage of Hurricane Michelle in early Nov. Numbers of Neotropical migrants seemed less conspicuous this season, although our recently-enacted policy of not "plucking" observations from Internet lists likely played a role in fewer reports. Nonetheless, a few "good" counts were made: there were 22 species of wood-warblers at Fort De Soto CP 27 Sep (L. Atherton) and 24 species in the Lower Keys (mostly at Key West) 28-29 Sep (D. LaPuma et al.).

FOSRC review species reported this fall were 2 White-faced Ibises at Lake Apopka Restoration Area, Florida's third verifiable Surfbird at Sanibel Island, the Heermann's Gull, Thayer's Gull, and three Elegant Terns (or "Elegant-type" terns) at Fort De Soto, Florida's second Flammulated Owl in *Santa Rosa*, *Myiodynastes* flycatchers at Gulf Breeze and Miami, the Tropical/Couch's Kingbird at Jupiter Inlet, Tropical Kingbird at St. Marks NWR, Bewick's Wren at Fort Pickens, and the Bullock's Oriole at Miami. Other interesting sightings were several breeding reports of Black-bellied Whistling-Ducks in the northern and central Peninsula; 6 Sabine's Gulls, including the first record for the Gulf coast; Northern Flickers with reddish tails in *Alachua* and *Leon* (2), 63 Gray Kingbirds in Hernando; the state's largest migration of thrushes ever reported; possibly the first verifiable breeding record for Common Myna in Florida; and the state's latest exotic—Bronze Mannikin—at Lake Apopka.

Species Accounts

Common Loon: 1 at Spring Hill (*Hernando*) 18-27 Nov (A. and B. Hansen); 1 at LARA 18 Nov (H. Robinson).

Pied-billed Grebe: 185 at PPM 30 Nov (P. Fellers).

Horned Grebe: 28 at Green Key, New Port Richey (*Pasco*) 10 Nov (K. Tracey).

Eared Grebe: singles at FWBSTF 1-9 Oct (B. and L. Duncan) and 27-29 Nov (D. Ware et al.), LARA 7 Oct (H. Robinson), and Springhill Road STF (*Leon*) 9-23 Oct (G. Menk, J. Dozier, J. Murphy); 11 at PPM 7 Nov, and 19 at a different site 30 Nov (both P. Fellers).

Cory's Shearwater: ca. 60 birds 48-96 km SE of Perdido Pass (*Escambia*) 22 Sep (S. Pagliughi); 1 just W of Key West (*Monroe*) 28 Sep (D. Goodwin); 1 found dead at Hollywood Beach 6 Oct (fide B. Anderson, to UCF); 25 at Boynton Inlet (*Palm Beach*) 4 Nov (J. Boyd et al.); 50 at Red Reef Park, Boca Raton (*Palm Beach*) 4 Nov (D. LaPuma et al.); 3 definites and 90 probables at Turtle Mound, Canaveral National Seashore (*Volusia*) 6 Nov (M. Gardler); 90 off Port Canaveral (*Brevard*) 7 Nov (K. Knight et al.).

Manx Shearwater: 1 found dead at John U. Lloyd SP (*Broward*) 22 Sep (S. Epps, to UCF).

Audubon's Shearwater: 100+ birds 48-96 km SE of Perdido Pass 22 Sep (S. Pagliughi); 11 at Boynton Inlet 4 Nov (J. Boyd et al.).

Brown Booby: 1 immature at Turtle Mound 6 Nov (M. Gardler).

American White Pelican: 1000+ in *Okaloosa* and *Santa Rosa* 12 Oct (L. Duncan et al.) was the record high count for the region (fide B. Duncan); 1050 at Flamingo, ENP-W 9 Nov (B. Roberts); 1200 at PPM 24 Nov (C. Geanangel, P. Timmer, L. Albright).

Brown Pelican: 600 feeding off FDCP 24 Nov (P. Sykes).

Double-crested Cormorant: 3200 feeding off FDCP 24 Nov (P. Sykes).

Magnificent Frigatebird: 4 over Alligator Point (*Franklin*) 5 Aug (J. Murphy), 1 there 4 Sep (J. Dozier), and up to 4 there 13 Oct (J. Murphy, G. Sprandel); 12 W of Lake Wales (*Polk*) 14 Sep (T. Palmer); 1 over Belle Glade Campground (*Palm Beach*) 16 Sep (C. Weber, G. Hunter); 1 at Crescent Beach (*St. Johns*) 7 Oct (G. Basili); 1 at Cedar Key (*Levy*) 8 Nov (G. Menk).

American Bittern: 1 at LARA 22 Aug (H. Robinson).

Cattle Egret: 1 at Sneads (*Jefferson*) 2 Nov, and 35 at Madison (*Madison*) 30 Nov (both R. Atchison).

Reddish Egret: 1 red morph at LARA 9 Sep (H. Robinson).

White × Scarlet Ibis: 1 pink bird at Port Canaveral 4-10 Nov (S. Linney, K. Knight, B. Anderson et al.).

*White-faced Ibis: 1 at LARA 4 Nov, and 2 there 11 Nov; the "red eyes" were noted clearly (H. Robinson).

Roseate Spoonbill: 48 first-year birds at Holiday (*Pasco*) 19 Aug (K. and L. Tracey); 1 first-year bird at St. Marks NWR (*Wakulla*) 21 Sep (E. White); 2 at Vilano Beach, St. Augustine (*St. Johns*) 23 Sep (J. Holstein, J. Baker).

Greater Flamingo: up to 27 at Snake Bight, ENP-W 8 Oct—EOS (B. Roberts).

Fulvous Whistling-Duck: 15 at Newnans Lake (*Alachua*) 27 Nov (T. Weber).

Black-bellied Whistling-Duck: 5 broods of 7-15 young in *Alachua* 9 Aug-9 Sep (W. Weaver, L. Gordon et al.); 2 at a *Hamilton* mine 26 Aug (B. Bergstrom); 3 adults and 12 "immatures" at Viera (*Brevard*) 26 Aug (B. Paxson); broods of 2, 6, and 8 chicks at the Sarasota "Celery Fields" 8 Sep (L. Snyder, S. Linney); 3 adults and 12 chicks at Emeralda Marsh Conservation Area (*Lake*) 15 Sep (P. May); 1 adult with 9 large ducklings at Bartow (*Polk*) 6 Oct (P. Fellers); 63 at Paynes Prairie Preserve SP (*Alachua*) 10 Nov (R. Rowan).

Greater White-fronted Goose: 3 at LARA 28 Oct (H. Robinson); 2 at FWBSTF 29 Oct-28 Nov (D. Ware, B. Duncan et al.); 1 at Niceville (*Okaloosa*) 31 Oct (D. Ware); 1 at Gulf Breeze (*Santa Rosa*) 1 Nov died the next day (M. and R. Rose, specimen to UF).

Snow Goose: 75 at St. Marks NWR 26 Oct (J. Dozier, J. Cavanagh et al.); 1 blue morph at Palm Harbor (*Pinellas*) 31 Oct-3 Nov (K. Allen, R. Smart); 13 (5 blue and 8 white) S of Dundee 3 Nov—EOS (B. and L. Cooper); 1 blue morph at Springhill Road STF 7 Nov (G. Menk); 1 white morph at Spring Hill 7—21 Nov (C. Black, A. and B. Hansen).

Muscovy Duck: 6+ broods along Lumsden Road, Brandon (*Hillsborough*) throughout Nov (B. Pranty).

American Black Duck: 1 at Merritt Island NWR 8 Sep (B. and L. Cooper); 1 at LARA 11 Nov—EOS (H. Robinson).

Mallard: 1 male S of Dundee 3 Nov was thought to be wild (B. and L. Cooper); a brood of day-old chicks at Brandon 9 Nov (B. Pranty).

Blue-winged Teal: 2459 at PPM 6 Oct (P. Fellers); 3005 at LARA 28 Oct-1 Nov (H. Robinson).

Cinnamon Teal: adult males at Honeymoon Island SRA 7 Oct (J. Bouton, C. Taylor) and LARA 1-27 Nov (H. Robinson).

Green-winged Teal: 20 at LARA 16 Sep (H. Robinson).

Canvasback: 4 at Punta Gorda (*Charlotte*) 21 Nov (W. Winton).

Redhead: 3 at Punta Gorda 21 Nov (W. Winton).

Greater Scaup: 1 at LARA 11 Nov—EOS (H. Robinson); 1 at PPM 24 Nov (C. Geanangel, P. Timmer, L. Albright).

Lesser Scaup: 1600 at PPM 30 Nov (P. Fellers).

Black Scoter: 17 off Key Biscayne (*Miami-Dade*) 3 Nov, and many off Red Reef Park 6 Nov (both R. Diaz); 9 at Turtle Mound 6 Nov (M. Gardler).

Bufflehead: 3 at LARA 7 Nov (H. Robinson).

Red-breasted Merganser: 4 at LARA 1 Nov (H. Robinson).

Ruddy Duck: 900 at PPM 30 Nov (P. Fellers).

Raptor Watch: For the third consecutive year, Hawkwatch International and Audubon of Florida conducted daily raptor watches at Curry Hammock SP (*Monroe*) 15 Sep-13 Nov (S. Brand, G. Phillips, C. Lott, C. Borg). All totals are of "southbound" birds, which is thought to be the most reliable method for estimating numbers of birds migrating past the site (C. Lott).

Species	**Totals**
Osprey	983
Swallow-tailed Kite	17
Mississippi Kite	57
Bald Eagle	19
Northern Harrier	741
Sharp-shinned Hawk	3697
Cooper's Hawk	335
Red-shouldered Hawk	7
Broad-winged Hawk	3535
Short-tailed Hawk	38
Swainson's Hawk	109
Red-tailed Hawk	5
American Kestrel	4338
Merlin	581
Peregrine Falcon	1432
Totals	**15,930**

OSPREY: 22 over Miami Shores (*Miami-Dade*) 30 Sep (D. Wright, M. E. Ahearn).

SWALLOW-TAILED KITE: 50 over Flamingo, ENP-W 7 Aug (B. Roberts); 1 at Paynes Prairie 16 Sep (J. Hintermister, M. Manetz, H. Adams).

WHITE-TAILED KITE: 4 over Miami Canal (*Palm Beach*) 3 Sep (D. Simpson); 2 at Brown's Farm Road area (*Palm Beach*) 19 Aug (C. Borg); 2 adults at Buck Island Ranch (*Highlands*) 24 Sep (M. McMillian).

SNAIL KITE: 1 female along US-41 in E *Collier* 16 Aug-30 Sep (T. Doyle, S. Bertone, D. Suitor).

MISSISSIPPI KITE: 1 at Orange Park (*Clay*) 3 Aug (L. McCullagh); 3 at S Jacksonville (*Duval*) 15 Sep (J. Cocke); 1 at Phipps Park, Tallahassee 15 Sep (R. Lengacher); 1 immature at Sanibel Lighthouse (*Lee*) 30 Sep (V. McGrath, C. Ewell et al.).

NORTHERN HARRIER: 1 at LARA 14 Aug (H. Robinson).

SHARP-SHINNED HAWK: 1 at Lakeland (*Polk*) 27 Aug (P. Fellers); 1 at LARA 29 Aug (H. Robinson).

COOPER'S HAWK: 12 at LARA 2 Sep (H. Robinson).

BROAD-WINGED HAWK: 47 at Sanibel Lighthouse 1 Oct (L. Baker).

SHORT-TAILED HAWK: 1 dark morph at Auburndale (*Polk*) 8 Aug (P. Fellers); 1 at Turkey Creek Sanctuary, Palm Bay (*Brevard*) 7 Sep (D. Simpson); 1 dark morph near Vero Beach (*Indian River*) 30 Sep (M. Gardler, W. Biggs); 1 light morph at Saddle Creek CP (*Polk*) 1 Oct (P. Fellers) and 27 Oct (L. Albright); 1 dark morph near Floral City (*Citrus*) 15 Oct (B. and L. Cooper); single light morphs at Disney Wilderness Preserve (*Osceola* or *Polk*) 27 Oct (P. Fellers) and 4-5 Nov (F. and R. Clark).

SWAINSON'S HAWK: 1 adult light morph near Haines City (*Polk*) 28 Aug (B. and L. Cooper); 1 immature light morph at FWBSTF 6-16 Nov (B. and W. Duncan, L. Fenimore, C. Parkel); 5 near ENP-E 28 Nov (R. Diaz).

CRESTED CARACARA: 59 in one field in N *Okeechobee* 24 Oct (P. Small).

AMERICAN KESTREL: singles at LARA 26 Aug (H. Robinson) and Cape Coral (*Lee*) 31 Aug (C. Ewell).

MERLIN: 47 total on the Guana River SP (*St. Johns*) hawk watch 27 Sep-12 Oct (B. Stoll et al.).

PEREGRINE FALCON: 489 total on the Guana River SP hawk watch 27 Sep-12 Oct (B. Stoll et al.).

BLACK RAIL: 1 or 2 called at Buck Island Ranch 20 Aug, and singles flushed there 20 Sep and 16 Oct (M. McMillian); 1 at Holey Land WMA (*Palm Beach*) 27 Aug (D. Simpson).

SORA: 100 heard while canoeing Newnans Lake 21 Oct (J. Hintermister, H. Adams).

AMERICAN COOT: 32,000 at PPM 3 Nov (P. Fellers).

SANDHILL CRANE: 1 at Navarre 1 Oct (T. Howard); 1 at Sneads 6 Nov (R. Atchison); 8 at Panacea (*Wakulla*) 8 Nov (J. Cavanagh); 1 at FWBSTF 11-28 Nov (B. and L. Duncan et al.); 1 at S Jacksonville all Nov (J. Cocke).

BLACK-BELLIED PLOVER: 483 N of Bakersville (*St. Johns*) 30 Sep (J. Hintermister, L. Davis); 160 at FDCP 24 Nov (P. Sykes).

AMERICAN GOLDEN-PLOVER: 2 at Alligator Point 2 Sep (S. Jones); 1 at Carrabelle (*Franklin*) 16 Sep (J. Dozier); 1 at Springhill Road STF 18-28 Sep (G. Menk); 4 at LARA 14 Oct (H. Robinson).

SNOWY PLOVER: 1 at Pine Island (*Hernando*) 12 Aug (C. Black, A. and B. Hansen); 1 at Talbot Islands SP (*Duval*) 7 Nov—EOS, where 1 wintered last year (P. Leary).

SEMIPALMATED PLOVER: 65 N of Bakersville 30 Sep (J. Hintermister, L. Davis); 185 at FDCP 24 Nov (P. Sykes).

PIPING PLOVER: 15 at FDCP 24 Nov (P. Sykes).

KILLDEER: 1 downy chick at Springhill Road STF 18 Nov (G. Menk).

AMERICAN AVOCET: 2 at LARA 9 Sep (H. Robinson); 3 at Dunedin Causeway 6 Oct (E. Kwater, D. Powell); 3 at Green Key 24 Sep (K. Tracey); 205 at PPM 6 Oct (P. Fellers); 3 at Pine Island Park 6 Oct (R. Grant); 10 at Hudson Beach (*Pasco*) 7 Oct

(J. Bouton, C. Taylor); 3 at Cedar Key 29 Oct (M. Gardler, J. Gaetzi); 1 at Pensacola (*Escambia*) 30 Oct (L. Duncan et al.); 11 at FDCP 4 Nov (B. and L. Atherton et al.); widespread in *Franklin*, *Leon*, and *Wakulla* this fall (17 Aug-24 Nov), with 7 at St. Marks NWR 10 Nov (G. Sprandel) and 4 at Springhill Road STF 12 Nov (G. Menk).

Solitary Sandpiper: 1 at Honeymoon Island SRA 17 Nov (A. and R. Smith).

Upland Sandpiper: 18 at Brown's Farm Road area 19 Aug (C. Borg); 1 at Fort Myers 8-9 Sep (D. Suitor et al.); 1 at FDCP 21 Sep (L. Atherton).

Long-billed Curlew: 2 at FDCP all season (L. Atherton et al.); 1 at Huguenot Memorial Park 20 Oct (J. Holstein et al.); 1 at Cedar Key 29 Oct (M. Gardler, J. Gaetzi).

Hudsonian Godwit: 1 at Fort Island Beach Park (*Citrus*) 14 Sep (T. Rogers, details to FOC).

Ruddy Turnstone: 1 at Springhill Road STF 13 Sep (G. Menk).

*Surfbird: 1 at Sanibel Island (*Lee*) 26-28 Oct (B. and C. Postmus et al., videos by D. Powell, B. Pranty).

Red Knot: 1 at LARA 16 Sep (H. Robinson).

Sanderling: 1 at LARA 29 Aug (H. Robinson); 1 at Tram Road STF (*Leon*) 13 Sep (G. Menk).

White-rumped Sandpiper: 8 at LARA 16 Sep (H. Robinson).

Baird's Sandpiper: 1 at LARA 13 Sep (H. Robinson); 1 at FWBSTF 6 Oct (B. Duncan, P. Tetlow et al.); 1 near Fort Meade (*Polk*) 20 Oct (T. Palmer).

Pectoral Sandpiper: 690 at LARA 16 Sep (H. Robinson).

Purple Sandpiper: 1 at Boynton Inlet 15 Nov—EOS (P. Bithorn, C. J. Grimes et al.).

Dunlin: 1 leucistic individual at St. Marks NWR 4 Nov (S. Dinsmore); 375 at FDCP 24 Nov (P. Sykes).

Stilt Sandpiper: 18 at LARA 2 Aug (H. Robinson); 2 at N Jacksonville 13 Aug (J. Hintermister).

Buff-breasted Sandpiper: up to 2 at Honeymoon Island SRA 2-4 Sep (R. Smart, J. Fisher et al.); 2 at Brown's Farm Road area 7 Sep (K. Allen et al.); 2 at LARA 16 Sep and 3 there 26 Sep (H. Robinson); 1 at St. Joseph Peninsula SP (*Gulf*) 28 Sep (G. Sprandel); 1 at Tram Road STF 17 Oct (J. Cavanagh); 1 N of Bakersville 30 Sep (J. Hintermister, L. Davis); 1 W of St. Augustine 29-30 Sep (L. Davis).

Ruff: 1 at LARA 16 Sep (H. Robinson).

Long-billed Dowitcher: 2 at Brown's Farm Road area were identified by plumage and call 11 Aug (D. Simpson); 182 at PPM 5 Nov (P. Fellers).

Common Snipe: 1 at FDCP 17 Oct (B. Ahern, L. Atherton, I. Hernandez).

American Woodcock: 1 at Honeymoon Island SRA 17 Nov (A. and R. Smith, R. Webb).

Red-necked Phalarope: 142 at Fort George Inlet (*Duval*) 15 Sep (R. Clark); 15 at Canaveral National Seashore (*Volusia*) 16 Sep (D. Simpson); 1 juvenile at Four Corners Mine (*Polk*) 14 Oct (L. Albright, C. Geanangel, details to FOC).

Red Phalarope: 1 at LARA 16 Sep (H. Robinson).

Pomarine Jaeger: 70 at Boynton Inlet 4 Nov (D. LaPuma et al.); 3 definites and 50+ probables at Turtle Mound 6 Nov (M. Gardler).

Parasitic Jaeger: 7 light morph adults at Turtle Mound 6 Nov (M. Gardler).

Franklin's Gull: 1 at Destin (*Okaloosa*) 27 Oct (D. Ware); 2 first-year birds at FDCP 28-29 Oct (L. Atherton et al.); 1 first-year bird at FWBSTF 30 Oct (B. Duncan, D. Simpson, E. Case).

*Heermann's Gull: 1 remained at FDCP to 10 Nov (B. and L. Atherton).

Herring Gull: 692 at Talbot Islands SP 28 Sep (R. Clark).

*Thayer's Gull: 1 first-year bird at FDCP 24 Oct—EOS (L. Atherton et al.).

Lesser Black-backed Gull: 1 at Key Biscayne 6 Sep (R. Diaz); 74 at Talbot Islands SP 28 Sep (R. Clark); 7 at FDCP 12 Oct was the most ever seen there (L. Atherton); 1 adult at Gulf Harbors, New Port Richey 6 Nov—EOS (K. and L. Tracey) was the first for *Pasco*.

GREAT BLACK-BACKED GULL: 1 at Key Biscayne 13 Aug (R. Diaz); 2 (1 adult and 1 third-year bird) both had yellowish legs at FDCP 22 Sep (L. Atherton, R. Webb), and 1 to 29 Sep (P. Sykes).

SABINE'S GULL: single juveniles at Green Key 6 Oct (K. Tracey, photo to FOC), John U. Lloyd SP 9 Oct (M. Berney), Red Reef Park 4 Nov (D. LaPuma et al.), ca. 100 m off Turtle Mound 6 Nov (M. Gardler); up to 2 juveniles at Boynton Inlet 3 Nov—EOS (B. Hope et al.).

GULL-BILLED TERN: 1 at Green Key 6 Nov and 2 there 23 Nov (K. Tracey et al.).

CASPIAN TERN: 35 at Fort George Inlet 15 Sep (R. Clark); 219 at PPM 6 Oct (P. Fellers).

ROYAL TERN: 325 at Fort George Inlet 15 Sep (R. Clark); 1 at Newnans Lake 15 Sep (J. Bryan); 200 off Port Canaveral 7 Nov (K. Knight et al.); 4 at PPM 30 Nov (P. Fellers).

*ELEGANT TERN: at least 3 different individuals were photographed at FDCP this season, although their status as pure Elegants or hybrids currently is uncertain. One was an adult and two were immatures, with one of these "most certainly" a juvenile. The following information was provided by L. Atherton: 1 carrying a fish was pursued by a second, begging tern 17 Aug. The tern carrying the fish had a deep orange bill, white outer tail feathers, and remnants of a secondary bar. The second bird had dark "smudging" on the deep orange bill with a yellowish tip, dark outer tail feathers, a secondary bar, and reddish coloring in feet; 1 on 21-22 Sep showed black outer tail feathers but no smudging on the bill, which was deep orange with yellowish tip; 1 on 23 Sep was an adult with all whitish tail feathers, a deep orange bill, and a crest that was longer and had different pattern around the eyes compared to the bird seen the previous two days. Additionally, 1 "obvious hatch-year [Elegant × Sandwich tern] hybrid" with dark carpal and secondary bars, a much paler orange bill, and a short crest at Cortez Beach (*Manatee*) 9 Oct.

SANDWICH TERN: 72 at Fort George Inlet 15 Sep (R. Clark); 2 at Newnans Lake 15 Sep (R. Rowan, J. Bryan); 51 at PPM 6 Oct (P. Fellers); 1000 off Port Canaveral 7 Nov (K. Knight et al.); 330 at FDCP 24 Nov (P. Sykes).

COMMON TERN: 1 at LARA 14 Aug and 4 there 16 Sep (H. Robinson); 210 at Fort George Inlet 15 Sep (R. Clark); 1 at Newnans Lake 15 Sep (R. Rowan, J. Bryan); 30 off Port Canaveral 7 Nov (K. Knight et al.); 1 at Cocoa (*Brevard*) 10 Nov (B. Anderson, C. Paine).

ARCTIC TERN: 1 first-year bird at Navarre Flats (*Santa Rosa*) 3 Aug (B. Duncan, E. Case, details to FOC) was the first report for the W Panhandle.

FORSTER'S TERN: 153 at Fort George Inlet 15 Sep (R. Clark); 565 at FDCP 24 Nov (P. Sykes); 225 at PPM 30 Nov (P. Fellers).

TERNS: 4000 feeding off FDCP 24 Nov (P. Sykes).

LEAST TERN: 1 adult feeding young at Key West 15 Aug (J. Ondrejko); 1 at Newnans Lake 15 Sep (J. Bryan).

BRIDLED TERN: 101 at Fort George Inlet 15 Sep (R. Clark); 1 bird 72 km SE of Perdido Pass 22 Sep (S. Pagliughi); 15 off Port Canaveral 7 Nov (K. Knight et al.).

SOOTY TERN: 1 at Fort Pickens (*Escambia*) 12 Aug (P. and R. McLeod); 91 at Fort George Inlet 15 Sep (R. Clark); 6 at Newnans Lake 15 Sep (J. Bryan, R. Rowan); 1 at Viera 15 Sep (B. Paxson et al.).

BLACK TERN: 139 at PPM 8 Aug (P. Fellers); 850 at Fort George Inlet 15 Sep (R. Clark); 26 at LARA 16 Sep (H. Robinson).

BLACK SKIMMER: 400 at Shell Mound, Cedar Key 18 Sep (T. Rogers); 625 at FDCP 24 Nov (P. Sykes); 375 at PPM 30 Nov (P. Fellers).

WHITE-CROWNED PIGEON: 1 immature at Hugh Taylor Birch SP (*Broward*) 12 Sep (W. George).

WHITE-WINGED DOVE: singles at Key West 3 Aug, 5 Oct, and 24 Nov (J. Ondrejko) and Gainesville 5 Aug (R. Rowan) and 16 Oct (M. Jones), and 3 there 30 Sep-21 Nov (R. Robinson); 24 at LARA 19 Sep (H. Robinson); 14 at Eastpoint (*Franklin*) 27 Oct (S. Klink).

Cockatiel: 3 at Seminole (*Pinellas*) 29 Nov (J. Fisher).

Budgerigar: 1 at Seminole 12 Aug (J. Fisher); 74 at the Bayonet Point (*Pasco*) roost 30 Nov (K. Tracey).

Rose-ringed Parakeet: 8 at Vilano Beach, St. Augustine 22 Sep (J. Holstein); 100 at a Naples roost 29 Oct (S. Epps), and two flocks—thought to be separate—of 95 and 132 birds there 27 Nov (D. Suitor, B. Pranty [videotape]).

Blue-crowned Parakeet: 2 or 3 at Naples 14 Oct (K. and T. Doyle, B. Pranty [videotape]).

White-eyed Parakeet: 2 or 3 at Naples 14 Oct (K. and T. Doyle, B. Pranty [videotape]).

Orange-fronted Parakeet: 1 at Boynton Inlet 23 Nov (T. Doyle).

Black-hooded Parakeet: 20+ at Boynton Inlet 23 Nov (T. Doyle).

Monk Parakeet: 1 at Ortona Lock (*Glades*) 5 Aug (V. McGrath et al.); 45 at Auburndale 30 Aug (T. Palmer); 2 at N Pensacola 18 Sep (J. and L. Gould); 1 near Apalachicola (*Franklin*) 8 Sep (K. Malone); 7 over Weekiwachee Preserve (*Hernando*) 19 Nov (A. and B. Hansen).

Black-billed Cuckoo: 1 at LARA 7 Oct (H. Robinson); 1 at Paynes Prairie 13 Oct (R. Rowan, J. Hintermister et al.).

Yellow-billed Cuckoo: 1 adult feeding a fledgling at St. Marks NWR 11 Sep (J. Dozier, J. Murphy); 1 at Goodwin WMA (*Brevard*) 10 Nov (C. Pierce, B. Anderson).

Groove-billed Ani: 1 in Bay 20 Oct (P. McLeod).

*Flammulated Owl: 1 on a condominium balcony at Navarre Beach (*Santa Rosa*) 9 Nov (N. Wirth) was rehabilitated at Wildlife Sanctuary, photographed (L. Duncan, E. Case), and released into central *Escambia* 12 Nov.

Lesser Nighthawk: 1 at W Kendall (*Miami-Dade*) 16 Nov (J. Boyd); 1 at Loxahatchee NWR (*Palm Beach*) 24 Nov (B. Hope).

Nighthawk species: 1 at Tallahassee 6 Nov (R. Lengacher).

Whip-poor-will: 1 sang at Fort George Island (*Duval*) 17 Aug (R. Clark); 1 sang at Bald Point 28 Aug (J. Dozier); 1 called at Brandon (*Hillsborough*) 10 Oct (E. Kwater); 2 at Brooker Creek Preserve (*Pinellas*) 11 Nov (R. Smith).

Chimney Swift: a roost at New Port Richey was last active 16 Oct, when 85 birds were present (K. Tracey et al.); 365 at LARA 10 Oct (H. Robinson).

Buff-bellied Hummingbird: 1 at Pensacola 19 Sep (J. Pfeiffer et al., banded by F. Bassett); 1 at Eastpoint 10 Nov (S. Klink, K. Malone).

Black-chinned Hummingbird: singles at Tallahassee 29-30 Sep (D. and S. Jue, J. Cavanagh) and 10-15 Nov (F. Rutkovsky, J. Cavanagh), Alachua (*Alachua*) 24-29 Oct (B. Wallace), and Gainesville 4 Nov (J. Bryan).

Rufous Hummingbird: single males at Jacksonville 31 Aug (P. Powell) and 13 Sep-7 Nov (P. Anderson), Winter Park (*Orange*) 25 Sep (fide K. Radamaker), Castellow Hammock (*Miami-Dade*) 17-20 Oct (R. Hammer), Tallahassee 5-17 Nov (F. Rutkovsky et al.), and Lakes Park, Fort Myers 10 Nov (W. Winton et al.); 1 female captured at Tallahassee 17 Nov had been banded at the same site the previous year (F. Bassett).

Selasphorus species: singles at Bald Point 4 Sep, 27 Sep, and 24 Oct (J. Dozier), Alligator Point 5 Sep (J. Dozier) and 2 Oct (J. Murphy), ENP-E 3 Nov—EOS (fide J. Boyd), Black Swamp (*Leon*) 7 Nov (G. Menk), and Alachua 26 Nov (Bob Wallace); trios at Castellow Hammock 13 Sep-3 Nov (R. Hammer, J. Boyd et al.) and Gainesville 27 Oct—EOS (G. Townley, R. Palenik).

Red-headed Woodpecker: 43 at Black Lake Loop, O'Leno State Park (*Columbia*) 12 Oct (J. Hintermister).

Hairy Woodpecker: 1 in N *St. Johns* 9 Nov (P. Powell); 1 at LARA 27 Nov (H. Robinson).

Northern Flicker: singles in *Leon* 2 Sep (S. Jones) and 31 Oct (G. Menk) both had reddish undertails; 1 at O'Leno State Park 12 Oct with "a black malar stripe, a brown face . . . definitely red tail feathers" was thought to be an intergrade (J. Hintermister).

Olive-sided Flycatcher: 1 at Alligator Point (*Franklin*) 29 Sep (J. Dozier [photos to FOC], J. Murphy).

YELLOW-BELLIED FLYCATCHER: 1 at Tallahassee 19-20 Sep (J. Cavanagh, details to FOC).
"TRAILL'S" FLYCATCHER: 1 at Tallahassee 20 Sep (J. Cavanagh, details to FOC).
LEAST FLYCATCHER: 2 molting adults at Rotenberger WMA (*Palm Beach*) 14 Aug (D. Simpson); 1 called at San Luis Mission Park (*Leon*) 6 Oct (D. Harder, G. Menk); up to 3 at LARA 7 Nov—EOS (H. Robinson).
VERMILION FLYCATCHER: single males at FWBSTF 10 Sep (D. Ware et al.) and 9-10 Oct (B. Duncan, D. Ware), and 1 first-year female there 6 Nov (W. Duncan); 1 adult male at Overstreet Landing, Lake Kissimmee (*Osceola*) 6 Oct (D. Goodwin, W. Biggs et al.); 1 at LARA 17 Oct (H. Robinson); 1 female at Tallahassee 29 Nov (G. Menk).
ASH-THROATED FLYCATCHER: 1 at Paynes Prairie 31 Oct—EOS (L. Davis et al.); up to 5 at LARA 1 Nov—EOS (H. Robinson); 1 at FWBSTF 10-11 Nov (L. Fenimore, B. and L. Duncan et al.).
LA SAGRA'S FLYCATCHER: 1 at A.D. Barnes Park 24 Oct-7 Nov (M. Wheeler et al., photos by T. Ramsey to FOC); 1 at Bill Baggs/Cape Florida SP (*Miami-Dade*) 12 Nov (R. Diaz).
**MYIODYNASTES* SPECIES: 1 at Gulf Breeze 10 Sep was thought to be a Sulphur-bellied Flycatcher (B. Duncan, details to FOC); 1 at FIU Campus, Miami (*Miami-Dade*) 25 Sep (M. Davis, R. Diaz).
*TROPICAL/COUCH'S KINGBIRD: 1 at Jupiter Inlet (*Palm Beach*) 7 Sep (J. Hailman).
*TROPICAL KINGBIRD: 1 at St. Marks NWR 11 Nov—EOS (M. and N. Miller, G. Farr, and E. Hawkins et al., photo to FOC).
WESTERN KINGBIRD: 1 at Tallahassee 26 Oct (R. Lengacher); 1 at Alachua 28 Oct (C. Graham); 2 at Paynes Prairie 30-31 Oct (L. Hensley et al.); 2 at Merritt Island NWR 10 Nov (B. Anderson et al.).
GRAY KINGBIRD: 1 at LARA 2 Aug and 2 there 17 Oct (H. Robinson); 13 at Green Key 3 Aug (K. Tracey); 1 at Newnans Lake 5 Sep (M. Landsman, B. Muschlitz); 63 at Weeki Wachee (*Hernando*) 13 Sep (M. Gardler); 1 at Overstreet Landing 6 Oct (D. Goodwin, W. Biggs et al.); 1 at Flamingo ENP-W 27 Oct (B. Roberts).
SCISSOR-TAILED FLYCATCHER: singles at Fort Pickens 7 Oct (B. and P. Tetlow), 15 Oct (B. Duncan), and 27 Nov (B. and W. Duncan), Gulf Breeze 8 Oct (M. Rose), and Bald Point 16 Oct (J. Murphy).
BELL'S VIREO: 1 near ENP-E 13 Nov—EOS (D. Simpson, C.J. Grimes et al.).
PHILADELPHIA VIREO: 2 at Tallahassee 1 Sep and 1 there 7 Sep (J. Cavanagh, details to FOC); singles at FDCP 26 Sep (M. Wilkinson, L. Atherton), Sawgrass Lake CP (*Pinellas*) 26 Sep (R. Smith), W Kendall 26 Sep and 19 Oct (J. Boyd), and Hatbill Park (*Brevard*) 29 Sep (B. Paxson et al.).
PURPLE MARTIN: 20,000 at Marco Island (*Collier*) in late Aug (B. Dietrich).
NORTHERN ROUGH-WINGED SWALLOW: 1 at Bald Point 22 Nov (J. Dozier).
BANK SWALLOW: 64 at LARA 26 Aug and 145 there 2 Sep (H. Robinson); about 12 fed on insects attracted to street lights at Daytona Beach (*Volusia*) at 0330 hrs 27 Aug (D. Hartgrove).
CLIFF SWALLOW: 1 at Flamingo, ENP-W 2 Aug, and 5 there 7 Aug (B. Roberts); 18 at LARA 26 Sep (H. Robinson); 5 at FDCP 1 Oct (R. Webb).
BARN SWALLOW: 1450 at LARA 2 Sep, and 480 there 30 Sep (H. Robinson); 2 at Springhill Road STF 16 Nov (G. Menk); 1 at Dickerson Bay (*Wakulla*) 18 Nov (H. Hooper).
SWALLOWS: 1000 estimated in the Brown's Farm Road area 11 Aug, of which "the majority" were Bank, followed by hundreds of Trees, about 100 Barns, 10 Cliffs, and 0 Rough-wingeds (D. Simpson).
RED-BREASTED NUTHATCH: 1 at Lower Suwannee NWR (*Levy*) 25 Oct (A. Kratter).
*BEWICK'S WREN: 1 at Fort Pickens 29 Oct (D. Simpson, B. and L. Duncan, details to FOC) was thought to be of the southwestern subspecies because of its "grayness."
HOUSE WREN: 1 at LARA 26 Sep, and 282 there 7 Nov (H. Robinson).
MARSH WREN: 1 "Worthington's" at Eco Pond, ENP-W 11 Nov (J. Boyd).

Golden-crowned Kinglet: 1 at St. George Island 15 Oct (G. Menk); 1 at St. Marks NWR 28 Oct (J. Dozier); 2 at Gainesville (*Alachua*) 28 Oct (R. Rowan, E. Scales); 20 at Lower Suwannee NWR 8 Nov (D. Steadman, A. Kratter et al.); 1 at Weekiwachee Preserve 12 Nov (C. Black).

Ruby-crowned Kinglet: 1 at Tallahassee 25 Sep (N. Dawson); 1 at Bonner Park (*Pinellas*) 26 Sep (R. Webb).

Eastern Bluebird: 1 at Boca Ciega Park, Seminole 26 Nov (J. Fisher).

Veery: 11 at LARA 26 Sep (H. Robinson).

Gray-cheeked Thrush: 10 nocturnal migrants heard over Weeki Wachee 26 Sep (M. Gardler).

Swainson's Thrush: hundreds of nocturnal migrants heard over at Weeki Wachee 21 Sep, and *1500* heard there 26 Sep (M. Gardler); 36 at LARA 26 Sep (H. Robinson); birds "all over" Corkscrew Swamp Sanctuary (*Collier*) 29 Sep (J. Boyd et al.); "dozens" at St. Marks NWR 29 Sep (D. Simpson); 17 at FDCP 29 Sep (P. Sykes); "several" at St. George Island (*Franklin*) 30 Sep (J. Dozier).

Gray Catbird: 83 at Crystal River State Buffer Preserve (*Citrus*) 2 Oct (A. and B. Hansen); 148 at LARA 24 Oct (H. Robinson).

Common Myna: 1 at Placid Lake Estates (*Highlands*) ca. Jul-Aug (D. Humested, photo to FOC); 2 adults at an apparently active nest at Fort Lauderdale 12 Nov (S. Epps, B. Pranty [videotape]).

American Pipit: 1 near ENP-E 17-18 Nov (D. LaPuma, M. Davis); 102 at LARA 25 Nov (H. Robinson).

Sprague's Pipit: 1 at Apalachicola Airport (*Franklin*) 21 Nov (A. and R. Smith et al.).

Blue-winged Warbler: 1 at S Jacksonville 26 Aug (J. Cocke); 11 reports from *Franklin*, *Leon*, and *Wakulla* (fide G. Menk).

Golden-winged Warbler: among 8 reports (18 Aug-9 Oct) were duos at Werner-Boyce Salt Springs Run SP (*Pasco*) 22 Sep (K. Tracey et al.) and Corkscrew Swamp Sanctuary (*Collier*) 29 Sep (J. Boyd et al.).

"Brewster's" Warbler: 1 probable first-generation female at Meade Gardens (*Orange*) 28 Sep (B. Anderson et al.).

Tennessee Warbler: 7 at Turkey Creek Sanctuary 29 Sep (P. Fellers et al.); 7 near Vero Beach 29 Sep (M. Gardler, W. Biggs).

Orange-crowned Warbler: 2 at Bald Point 8 Oct (J. Dozier, J. Murphy); 1 at Green Key 19 Oct (K. Tracey).

Nashville Warbler: 15 reports statewide 22 Sep-5 Nov, all singles except for 3 at FDCP 17 Oct (L. Atherton).

Northern Parula: 1 juvenile at A. D. Barnes 1 Aug (D. LaPuma); 1 at Tallahassee 3 Nov (F. Rutkovsky).

Yellow Warbler: 71 at LARA 16 Aug (H. Robinson); 1 at Tram Road STF 17 Oct (K. MacVicar); 3 at Belle Glade Campground 17 Nov (C. Weber).

Chestnut-sided Warbler: 10 at Sawgrass Lake CP 26 Sep (R. Smith).

Cape May Warbler: 1 at Cape Florida/Bill Baggs SP 8 Sep (fide J. Boyd).

Black-throated Blue Warbler: 1 at A.D. Barnes Park 1 Aug (D. LaPuma); 1 male at Bald Point 29 Aug (J. Dozier); 1 S of Sebastian Inlet (*Indian River*) 25 Nov (D. Simpson).

Yellow-rumped Warbler: 2 at Bald Point 3 Oct (J. Dozier, J. Murphy); 1 "Audubon's" Warbler at LARA 11 Nov (H. Robinson); dawn counts at Green Key (thought to be of different flocks each day) were of 860 on 24 Nov, 1138 on 25 Nov, 1208 on 27 Nov, 810 on 29 Nov, and 359 on 30 Nov (K. Tracey).

Prairie Warbler: 39 at LARA 9 Sep (H. Robinson); 1 spent all season at S Jacksonville, where 1 wintered last year (P. Powell).

Bay-breasted Warbler: at least 6 in *Miami-Dade* variously 19 Sep-21 Oct, including 3 at Cape Florida/Bill Baggs SP 22 Sep (fide J. Boyd); singles at Birch SP 21 and 26 Oct (fide W. George).

Blackpoll Warbler: small numbers at several sites in Broward 28 Sep-28 Oct, with 4 at Birch SP 30 Sep (fide W. George); at least 8 variously in *Miami-Dade* and *Monroe* 29 Sep-7 Nov, including 3 at FIU campus 16 Oct (M. Davis); 1 at FDCP 3 Oct and 2 there 6 Oct (L. Atherton et al.); 1 at St. George Island 30 Oct (D. and S. Jue).

Cerulean Warbler: singles at Tallahassee 12 Aug (D. and S. Jue) and 14 Sep and 22 Sep (F. Rutkovsky); 3 at FDCP 15 Aug (L. Atherton); 1 at Sawgrass Lake CP 16 Aug (M. Wilkinson); 1 at Matheson Hammock 22 Aug (M. Davis); 1 at Alligator Point 4 Sep (J. Dozier).

Prothonotary Warbler: 1 at A.D. Barnes Park 1 Aug (D. LaPuma); 1 at Green Key 3 Aug (K. Tracey).

Worm-eating Warbler: 1 at John Pennekamp Coral Reef SP (*Monroe*) 24 Nov (K. Radamaker).

Swainson's Warbler: singles at LARA 2 Sep (H. Robinson), Saddle Creek CP 10 Sep (R. Webb), Largo 21 and 26 Sep (J. Fisher), Boca Ciega Park 26 Sep (J. Fisher), FDCP 26 Sep (L. Atherton), and Birch SP 19 Oct (W. George).

Ovenbird: 1 at Key West 18 Aug (J. Ondrejko); 17 at Saddle Creek CP 18 Sep (P. Fellers et al.).

Northern Waterthrush: 24 at LARA 13 Sep (H. Robinson); 1 at Goodwin WMA (*Brevard*) 10 Nov (E. Scales, C. Paine); 1 at Blue Heron STF (*Brevard*) 11 Nov (E. Scales et al.).

Louisiana Waterthrush: 1 at LARA 2 Aug, and 11 there 16 Aug (H. Robinson); 1 at Green Key 3 Aug (K. Tracey).

Kentucky Warbler: 1 female at W Kendall 18 Sep (J. Boyd).

Common Yellowthroat: 108 at LARA 14 Oct (H. Robinson).

Hooded Warbler: 1 at LARA 1 Nov (H. Robinson).

Wilson's Warbler: singles at FDCP 9 Sep and 22 Sep (L. Atherton et al.), Largo 15 Sep (J. Fisher), Black Swamp 27 Sep and 24 Nov (G. Menk), near Vero Beach 28 Sep (M. Gardler, W. Biggs), at St. Marks NWR (J. Epler), Lakes Park 1 Oct (L. Atherton), 5 Nov (V. McGrath et al.), and 10 Nov (W. Winton et al.), S Jacksonville 5 Oct (P. Powell), A.D. Barnes Park 5-30 Oct (J. Boyd et al.), Lettuce Lake CP (*Hillsborough*) 13 Oct (R. Webb), Birch SP 28 Oct (W. George, M. Berney), Orlando (*Orange*) 12 Nov (B. Payne); E of ENP (3.6 km apart) 12 Nov (B. Boeringer) and 28 Nov (C.J. Grimes), and Emeralda Marsh Conservation Area (*Lake*) 25 Nov (J. Puschock); 2 at Black Swamp 8 Oct (G. Menk).

Canada Warbler: singles at Boca Ciega Park 7 Sep (J. Fisher), San Felasco Preserve SP (*Alachua*) 23 Sep (A. Kent, M. Manetz, J. Hintermister), Corkscrew Swamp Sanctuary 29 Sep (J. Boyd et al.), near Vero Beach 29 Sep (M. Gardler, W. Biggs), and at FDCP 29 Sep (S. Backes, L. Atherton) and 30 Sep (J. Gaetzi et al.).

Yellow-breasted Chat: 1 at Birch SP 6 Nov (W. George).

Summer Tanager: 8 at Turkey Creek Sanctuary 29 Sep (P. Fellers et al.).

Western Tanager: 1 adult male at Honeymoon Island SRA 31 Aug (L. Atherton, J. Gaetzi); 1 at A.D. Barnes Park 18 Oct (M. Wheeler, J. Rosenfield).

Western Spindalis: 1 black-backed male at Cape Florida/Bill Baggs SP 14-26 Nov (E. and G. Rosenberg, photos to FOC by L. Manfredi).

Chipping Sparrow: single juveniles at ENP 7-8 Sep (B. Roberts, details to FOC), 11 Oct (C. J. Grimes), and 24 Oct (M. Davis, J. Boyd et al.); 1 juvenile near High Springs (*Alachua*) 15 Sep (J. Hintermister, D. Morrow).

Clay-colored Sparrow: singles at Springhill Road STF 5 Sep (G. Menk), FWBSTF 6 Sep (D. Ware), Turkey Creek Sanctuary 7 Sep (D. Simpson), Mahogany Hammock, ENP-E 16 Sept (D. LaPuma, M. Davis et al.), Fort George Island 17 Sep (D. Simpson), Fort Pickens 3 Oct (L. Duncan, P. Beasley), Eco Pond, ENP-W 14-30 Oct (B. Roberts, C.J. Grimes), Canaveral National Seashore (*Volusia*) 16 Oct (D. Simpson), St. Marks NWR 26 Oct (K. MacVicar), FDCP 3 Nov (L. Atherton), E of ENP 18 Nov (D. LaPuma), and Alligator Point 26 Nov (J. Murphy).

Vesper Sparrow: 1 at ENP-E 13 Nov (C.J. Grimes).

Lark Sparrow: 1 at St. Marks NWR 18 Aug (T. Curtis); 4 at Bald Point 21 Aug (J. Dozier, J. Murphy), and 1 other there 29 Aug (J. Dozier); 1 at Gulf Breeze 30 Aug (B. Duncan); 1 at Paynes Prairie 22 Nov (P. Bithorn).

Savannah Sparrow: 237 at LARA 7 Nov (H. Robinson).

Grasshopper Sparrow: 1 at San Felasco Hammock 30 Sep (J. Hintermister, L. Davis).

Henslow's Sparrow: 4 at St. Marks NWR 4 Nov (B. Bergstrom et al.); 9 at Apalachicola National Forest (*Liberty*) 21 Nov (A. and R. Smith).

Song Sparrow: 1 at FDCP 6 Nov (L. Atherton, I. Hernandez).

Lincoln's Sparrow: 1 at Fort Pickens 5 Nov (S. Dinsmore); 1 at LARA 15 Nov—EOS (H. Robinson).

Swamp Sparrow: 93 at LARA 11 Nov (H. Robinson).

White-throated Sparrow: 2 at LARA 7 Nov—EOS (H. Robinson); up to 2 near Hatbill Park (*Brevard*) 9-10 Nov (C. Paine, B. Anderson et al.); 1 at Brooker Creek Preserve 11 Nov (R. Smith).

White-crowned Sparrow: 1 adult at ENP-E 11 Oct (C.J. Grimes).

Dark-eyed Junco: 1 at Tallahassee 24 Nov (L. Thompson).

Black-headed Grosbeak: 1 first-year male at Bald Point 23-25 Oct (J. Dozier et al., sketch to FOC by J. Cavanagh).

Blue Grosbeak: 34 at LARA 12 Aug and 29 Aug (H. Robinson).

Indigo Bunting: 108 at LARA 10 Oct (H. Robinson).

Painted Bunting: 5 at LARA 3 Oct (H. Robinson); 1 male at Tallahassee 25 Oct—EOS (B. Buford).

Dickcissel: 2 at LARA 9 Sep (H. Robinson).

Bobolink: 2 at LARA 19 Aug, and 513 there 13 Sep (H. Robinson); 3 at FWBSTF 22 Aug (D. Simpson); 4 at Springhill Road STF 18 Sep (G. Menk); 30 nocturnal migrants heard over at Weeki Wachee 26 Sep (M. Gardler); 3 at Green Key 16 Oct (K. and L. Tracey).

Red-winged Blackbird: 2300 at LARA 15 Sep (H. Robinson).

Yellow-headed Blackbird: 1 adult female at Fort Pickens 1 Aug (B. Duncan); 1 at FWBSTF 27 Sep (B. Duncan, D. Simpson); 1 first-year male at Key West, 8-9 Oct (J. Ondrejko); 1 adult male at Pensacola 25 Oct (D. Harmon); 1 at LARA 15 Nov (H. Robinson).

Rusty Blackbird: 1 at St. Marks NWR 25 Nov (K. Allen).

Brewer's Blackbird: singles at Springhill Road STF 12-13 Oct (J. Dozier, J. Murphy) and Paynes Prairie 18 Nov (B. Muschlitz).

Boat-tailed Grackle: 2420 at LARA 19 Sep (H. Robinson).

Shiny Cowbird: 7 (4 adult males, 1 immature male, and 2 females) at Mile Marker 87, Islamorada (*Monroe*) 30 Aug (L. Manfredi); 1 male at LARA 10 Oct (H. Robinson); 1 male at Hague Dairy 3 Nov (J. Hintermister).

Bronzed Cowbird: 1 at Hague Dairy 4 Nov (M. Manetz, A. Kent, R. Rowan); 1 adult male at Gulf Breeze 5-7 Nov (S. Dinsmore, B. Duncan); 1 adult male at FDCP 13 Nov was a park first (L. Atherton); 1 female and 1 male at Fort Pickens 18 Nov (D. Simpson).

Baltimore Oriole: 1 at Alachua 28 Aug (P. Burns).

*Bullock's Oriole: 1 first-year male at A. D. Barnes Park 19 Oct ff (J. Boyd et al.).

House Finch: 1 female at Spring Hill 10 Nov (M. Lyttle); 1 female and 1 male at Lutz (*Hillsborough*) 14 Nov (D. Grimes); 2 at Mashes Sands CP (*Franklin*) 22 Nov (A. and R. Smith et al.).

Nutmeg Mannikin: 2 at Indigenous Park, Key West 23 Aug (C. Borg); 1 at E Pensacola 31 Aug (M. Knepton).

Bronze Mannikin (*Lonchura cucullata*): 1 at LARA 18 Nov (H. Robinson) was the first Florida report.

European Goldfinch: 1 at E Pensacola 15 Sep (B. Gilley), and others at W Pensacola, near the fairgrounds, where there are exotic bird shows (fide L. Duncan).

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INFLUENCE OF VEHICLE TRACKS ON LOGGERHEAD HATCHLING SEAWARD MOVEMENT ALONG A NORTHWEST FLORIDA BEACH

MARGARET M. LAMONT, H. FRANKLIN PERCIVAL, AND SHEILA V. COLWELL[1]

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Abstract.—Upon emerging from the nest, loggerhead turtle (*Caretta caretta*) hatchlings face many threats, therefore expeditious seaward movement is critical. Obstacles along the beach may halt or impede hatchling movement, increasing time on the beach and energy expenditure. One obstacle that may impede hatchling seaward movement is vehicle tracks. Our objectives were to investigate the impacts vehicle tracks might have on loggerhead hatchlings. During the 1994 and 1995 hatching seasons (August-October) along Cape San Blas, Florida, an experimental arena was formed in which vehicle tracks of 10-15 cm (1994) and 5-10 cm (1995) depth were created. A control arena was also used and was left smooth. In 1994, all 20 hatchlings in an experimental group crawled into the vehicle depressions and were unable to crawl out within the arena. In 1995, half (20) of the hatchlings in the experimental group were unable to crawl out of the tracks within the arena. Hatchlings that traversed the tracks successfully in 1995 took an average one and one-half minute longer than those in the control group. These results suggest vehicle tracks are a significant obstacle and may increase energy expenditure and time on the beach. Tracks 10-15 cm deep are common on beaches with loose, coarse-grained sand, therefore efforts should be made to restrict beach driving where loggerhead turtles nest.

The most cosmopolitan of all sea turtle species is the loggerhead turtle (*Caretta caretta*). Because of its wide distribution, this species encounters many threats to survival, including incidental capture in trawling vessels, recreational development of nesting beaches, poaching, and destruction of foraging grounds (Pritchard 1997). Threats may

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impact individuals throughout their life cycle, however loggerhead hatchlings face significant and unique challenges.

In Florida, female loggerhead turtles come ashore to nest from May through August. Each female spends approximately 1.5 hours digging a flask-shaped cavity, depositing an average 110 eggs, and then retreating to the sea (Pritchard 1997). Although a female may return to the nesting beach throughout the season to lay multiple clutches, she provides no parental support. Her hatchlings must emerge from the nest, travel to the water, and move offshore with no protection or parental guidance.

Upon emerging from the nest, turtle hatchlings are exposed to many threats including predation by crabs, birds, and mammals; dehydration from sun exposure; human disturbance; and disorientation caused by human-made structures. Expeditious seaward movement is critical for survival. Obstacles along the beach may block a hatchling's path or slow its travel, thus increasing time on the beach and energy expenditure. Many natural obstacles are impossible to prevent, such as downed trees, crab holes, or plant roots, however reduction of man-made obstructions may help increase the success of hatchling seaward movement.

One set of obstacles that may delay hatchling seaward movement is vehicle tracks. Vehicle tracks vary greatly in dimension depending upon substrate and vehicle characteristics, although it is common to have tracks as deep as 10-15 cm (Hosier et al. 1981). Tracks of this depth may be a significant impediment to seaward-bound hatchlings by entrapping, inverting, or delaying their progress. Few studies have quantified the impacts of tracks on hatchling movement (Hosier et al. 1981).

Vehicular traffic is permitted on several sea turtle nesting beaches in Florida. In northwest Florida, the greatest density of loggerhead turtle nesting occurs along Eglin Air Force Base (AFB) property on Cape San Blas, where beach driving is allowed. From 1994 to 2000, an average 11.3 nests per kilometer were documented on Eglin AFB property (Lamont et al. 1997; Lamont pers. obs.). Public use of the beach continues to increase as development in adjacent coastal areas expands. As public use increases, so does the potential to affect sea turtle hatchlings. This project was designed to assess the impact that vehicle tracks may have on loggerhead hatchlings in this area.

Methods

We conducted experiments during the 1994 and 1995 loggerhead hatching seasons (August-October) on Eglin AFB property along Cape San Blas. A 15 × 15 m experimental arena and a 15 × 15 m control arena were set adjacent to the Gulf of Mexico on the east side of the cape spit. Control and experimental arenas were separated by a one-meter buffer zone, and each arena was raked smooth. In 1994, we created vehicle de-

pressions of 10-15 cm depth in the experimental arena. During the 1995 season, vehicle tracks of 5-10 cm were created. To form depressions, a 4x4 Chevrolet S-10 pick-up truck was driven once through the experimental arena parallel to the water. If needed, we removed additional sand from the depressions to create the desired depth and then drove one pass through the tracks again. The control site during both years was left smooth.

In each arena, we centrally placed a release mechanism three meters from the landward edge of the arena. The mechanism consisted of a 3-m long aluminum pole with a clip at the top through which a 6-m long cord was threaded. The cord was attached to an inverted black plastic flowerpot, and then drawn back behind the arena. Individual hatchlings were placed under the pot. We then retreated outside the arena to pull the cord and release each hatchling.

Loggerhead hatchlings were removed from nests on Eglin AFB property just prior to their emergence. Hatchlings were placed in a black bucket and transported to the release site approximately one hour after sunset. Individual hatchlings were released simultaneously in the control and experimental sites. We monitored the progress of the hatchling in the arenas by crawling 5-6 m behind the hatchling and marking the path it had taken with small wooden dowels. If the hatchling did not exit the arena within 20 min, the trial was stopped. We recorded the following variables: total distance traveled, direction, time, and success at reaching the water. If the hatchling entered and exited a vehicle depression, we also recorded the depth of the depression at the exit spot.

We used McNemar's test (Fleiss 1981) to determine if the proportion of hatchlings successfully reaching the water differed between control and experimental groups. We also used a 2-dependent sample t-test to analyze 1995 data. For 1995 data, we tested if the distance traveled to the water and the time required to reach the water differed between control and treatment hatchlings.

Results

Vehicle depressions 10-15 cm in depth. During the 1994 season, we released 40 hatchlings that had been removed from five nests (Table 1). Twenty hatchlings were used in the experimental arena and 20 in the

Table 1. The number of loggerhead sea turtle hatchlings that successfully negotiated vehicle tracks along Cape San Blas in northwest Florida. Turtles were successful if they reached the water while remaining inside the arena. If they were unsuccessful, they either exited the arena along a side boundary before reaching the water or became caught inside a depression and could not continue traveling. The large number of turtles that exited along the side of the arena in 1995 may have been influenced by lights from the increased number of residential houses east of the experimental site in 1995.

	Total no. of turtles	Depth of depression	No. successful	No. exited/side of arena	No. caught in depression
1994					
control	20	10-15 cm	14	0	6
experimental	20	10-15 cm	0	17	3
1995					
control	40	5-10 cm	17	23	0
experimental	40	5-10 cm	20	12	8

control arena. All hatchlings in the experimental group crawled into the vehicle depressions and were unable to crawl out within the arena and reach the water. Three fell onto their back as they crawled into the first depression, and the remaining hatchlings traveled along the first depression until they exited to the side of the arena. Of the 20 control hatchlings, 14 reached the water without leaving the arena. The remaining control hatchlings exited the side of the arena before encountering water. Success (reaching the water within the arena) was dependent upon the absence of vehicle tracks ($\chi^2 = 12.1$, 1 df, $P = 0.001$).

Vehicle depressions 5-10 cm in depth. During the 1995 season, we released 80 hatchlings that had been removed from four nests. Forty hatchlings were released in the control arena and 40 in the experimental arena. Half (20) of the hatchlings released into the experimental arena were unable to successfully reach the water. Of those 20 that were unsuccessful, eight crawled into the vehicle depressions and were unable to crawl out before they exited the arena. The remaining 12 negotiated the depressions, but then exited the arena before reaching the water. The hatchlings that were able to crawl out of the depressions did so at points that varied from 5-9.5 cm deep. In the control arena, 17 hatchlings reached the water without leaving the arena. Probabilities of reaching the water within the arena did not differ between the experimental and control groups ($\chi^2 = 0.27$, 1 df, $P > 0.1$).

We further tested 1995 data because of the confounding effect of residential lighting east of Air Force property during those releases. All hatchlings that did not successfully reach the water (except those that were trapped in vehicle tracks) exited the east side of the arena just before reaching the water. We believed that lighting was attracting them eastward out of the arena before they could reach the water, and we negated that effect by counting an eastward exit as successful. We then retested these data, and found a difference did exist between the experimental and control groups ($\chi^2 = 8.1$, 1 df, $P = 0.005$).

Of the paired releases in which the hatchlings in the control group and experimental group successfully reached the water (n = 11), hatchlings in the treatment group traveled farther than those in the control group ($t = 2.13$, 10 df, $P = 0.02$). The average distance traversed was 15.3 m for the treatment hatchlings and 11.9 m for the control hatchlings. The time for each hatchling to reach the water also differed ($t = 2.12$, 10 df, $P = 0.02$), with the treatment group averaging 84 s longer than the control group.

Discussion

Our research suggests vehicle depressions of 10-15 cm pose a serious barrier to loggerhead turtle hatchlings traveling to the sea. A sin-

gle depression is sufficient to delay hatchlings, which may increase their risks to predation and desiccation. In addition, depressions as shallow as 5-10 cm may impact sea turtle hatchling seaward movement. If a hatchling is able to negotiate this obstacle, the turtle may become disoriented thus increasing the amount of time on the beach resulting in greater energy expenditure and potential for predation.

In addition to disorienting hatchling turtles, vehicle tracks may slow forward progress and increase distance traveled to reach the water. Turtles that successfully negotiated the depressions traveled nearly 4 m farther than those in the control arena. Moving this extra distance causes hatchlings to expend greater amounts of energy. Emergence from the nest cavity instigates a period of high activity during which hatchlings enter the sea and swim away from land (Lohmann et al. 1997). Hatchlings must traverse the beach, negotiate incoming waves, and establish and maintain an offshore course. If energy reserves are depleted while traversing the beach, the hatchling may not have the strength to survive incoming waves or to travel far enough offshore to establish a migratory course.

Depressions of 10-15 cm are common along Cape San Blas, particularly in areas where sand is loose. Cox et al. (1993) noted an increase in deep ruts (>15 cm) along Cape San Blas during the dry months of July and August, and on the eastern edge of the cape spit where windblown sand accumulates. In addition to deep tracks, many sets of vehicle tracks may be encountered. In summer 1993, the mean daily number of vehicles driven on Cape San Blas was 6.2 (Cox et al. 1993). This number increased to 9.1 during the weekends. Each vehicle leaves four individual tracks (one set driving onto the beach and one set driving off), therefore six vehicles per day would result in 24 tracks left on one day. Without rain or wash-over from high tides, vehicle tracks may accumulate on the beach. Thus, during one 5-day week, an average 120 tracks may accumulate on Cape San Blas beaches, and during one average weekend (Saturday and Sunday), 72 tracks may result. If only 10% of these tracks are greater than 10 cm in depth, approximately 20 deep tracks would exist per week in which loggerhead turtle hatchlings must cross for successful movement to the water.

Our research suggests that one set of 10-15-cm deep vehicle tracks increased the hatchling's travel time by 1.5 min. Negotiating one set of vehicle tracks may not significantly lower a hatchling's energy reserves. However, immediately negotiating a second set of tracks may be more difficult, therefore a greater amount of energy would be expended and the second set of tracks may take longer to traverse than the first. With energy reserves lowered by the first and second set of tracks, a third set would be even more difficult and require greater energy expenditure and time. Most likely this pattern of increased diffi-

culty and time would continue so that when a hatchling reached a tenth set of deep vehicle tracks its energy reserves would already be low and it would take greater time and effort to travel through the tenth set of tracks than it did the first set. Upon reaching the water, the hatchling may have very little energy left for offshore migration. It appears the depth and number of vehicle tracks present on the beach may significantly influence hatchling seaward movement.

The results of this work illustrate the detrimental effect of vehicle tracks on hatchling survival, particularly in areas where the substrate consists of loose or course-grained sand. For this reason, an effort to reduce or restrict driving along beaches where loggerhead turtles nest is warranted.

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NOTES

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SECOND INLAND RECORD OF BLACK-CAPPED PETREL IN FLORIDA

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The Black-capped Petrel (*Pterodroma hasitata*) is rare to uncommon off the Atlantic coast of Florida, primarily in the Gulf Stream, where it regularly ranges north to North Carolina and irregularly to Maine (AOU 1998). Only a few thousand breeding pairs occur in the world with the highest known density occurring in Haiti where the species continues to suffer population stress due to human exploitation for food and predation by introduced predators (del Hoyo et al. 1992). Except for two inland occurrences, all reports of this species in Florida are from the Atlantic Ocean including the Florida Straits.

The inland occurrence of any procellariid species in Florida is accidental and the first occurrence for any species was a Black-capped Petrel (TTRS 6) found dead at the base of the WCTV tower at Tall Timbers Research Station north of Tallahassee, Leon County, on 11 September 1964 (Crawford 1981). This specimen appears highly likely to have originated in the Atlantic Ocean since Hurricane Dora made landfall on the east coast of Florida and crossed the state through Leon County just before the specimen was found.

The second inland procellariid occurrence was on 28 February 2001, in Lake County, when a live Black-capped Petrel was delivered to the Animal Clinic of Leesburg veterinary facility. The facility does not maintain records of donation, observation, or treatment of wild birds, and the identity of the person or persons originally finding the petrel is unknown. On 2 March 2001, the veterinarian discharged the bird to the care of Donna Morris (pers. comm.), a licensed wildlife rehabilitator in Lady Lake.

Clinic personnel told Ms. Morris that the bird was found in a harbor on the western shore of Lake Griffin adjacent to a residential development. Lake Griffin is a large freshwater lake in Lake and Marion counties. Its easternmost point is approximately 99.8 km due west of the Atlantic Ocean. Lake Griffin shares a hydrological basin with several other large lakes including Lake Apopka. Initially, Ms. Morris found the bird to be active and alert. However, it required force-feeding and its health declined rapidly. It died on 5 March 2001. No necropsy was performed.

The specimen was donated to the University of Central Florida, Orlando, where it was prepared as a round study skin (UCF 2350, Fig. 1) by Bruce H. Anderson. Anderson's notes on the specimen tag state that it is a male. Its right and left testes measured 3 mm × 1.5 mm and 4 mm × 3 mm respectively, indicating that the bird was not in breeding condition. The freshly thawed specimen weighed 264.2 g. There was no subcutaneous fat and the muscle was dehydrated. The plumage shows little wear except for the upper greater-secondary wing-coverts that are quite worn. There is no indication of molt.

Data were obtained from the National Data Buoy Center for two data stations, 20 and 120 nautical miles east of Cape Canaveral (NDBC, 2001). A non-scientific analysis of wind speed and direction for February 2001 shows no high winds with a sustained easterly component, suggesting that the bird arrived in Lake County independently of any apparent meteorological event. All inland reports for this species from Georgia, South Carolina, North Carolina, and Virginia are associated with storm systems (pers. comm. Charles Finley, Lex Glover, Harry LeGrand, Charlotte Friend, Edward S. Brinkley).

Current address: 3145 NW 46th Ave. Gainesville, FL 32605.

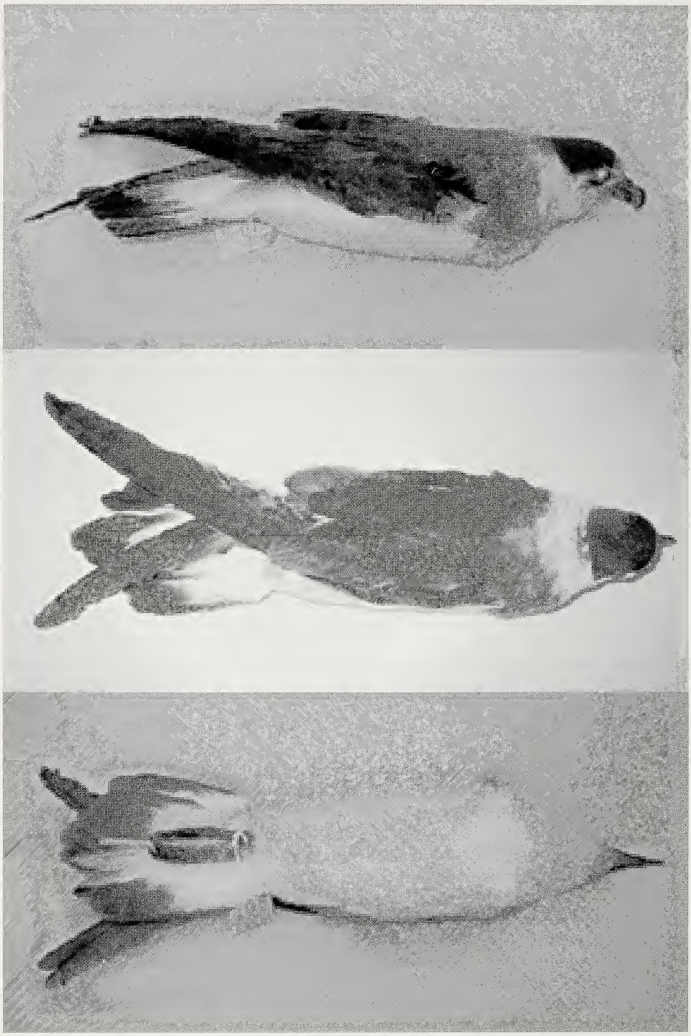

Figure 1. Study skin of male Black-capped Petrel (UCF # 2350), salvaged from a bird that died in captivity after it was found live at Lake Griffin, Lake County, Florida, on 28 Feb. 2001.

One specimen at the American Museum of Natural History, New York, taken at Indian River Inlet, St. Lucie Co., is labeled "winter 1846-47." The Lake County specimen is the first report in Florida documented from December-February. Aside from the above-mentioned specimens, there are two others from the Florida's Atlantic coast and approximately 15 sight reports offshore in the Atlantic Ocean, including the Florida Straits, from April-October (Stevenson and Anderson 1994; Pranty 1994, 1998).

Acknowledgments.—I thank Noel Wamer for retrieving the meteorological data from the National Data Buoy Center, Bruce H. Anderson for critiquing the manuscript and providing additional information, Walter Kingsley Taylor for allowing access to the UCF collection, and Donna Morris of Uncle Donald's Farm for providing information about and photographs of the live bird.

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THE RETURN OF A BROWN PELICAN NESTING COLONY

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The Florida Fish and Wildlife Conservation Commission (FWC) regularly surveyed nesting Brown Pelicans (*Pelecanus occidentalis*) in Florida from 1968 (Williams and Martin 1970) through 2001. Brown Pelicans were listed by the U.S. Department of Interior as endangered in Florida from 1970 until 1985 when region-wide numbers had recovered to a level that the species could be removed from the federal list (Nesbitt 1996). FWC has continued to monitor Brown Pelican nesting efforts in Florida following the delisting. In order to reduce costs complete statewide surveys were conducted every other year from 1983 to 1991 and no survey was conducted in 1997 and only a partial survey was conducted in 2000. The average annual number of Brown Pelicans nesting in Florida from 1968 to 2001 was 9,028.2 ± 1,321.5 (SD) pairs.

Pelicans have nested at 69 sites in Florida (that is considering the several small colonies in Florida Bay as 1 site) from 1968 to the present, with the number of pairs per colony ranging from 8 to 1,600 (Nesbitt 2001). Nesting sites are typically on small to medium-sized (5 < 10 ha) islands in the Intracoastal Waterway (Nesbitt 2001). In northern portions of the Florida peninsula black mangrove (*Avicennia germinans*) is the preferred nesting substrate.

Fourteen (20.3%) of the sites, usually the larger sites (≥400 pairs), were occupied by nesting pelicans for 25 or more of the 30 survey years. Nineteen (27.5%), typically the smaller sites (≤60 pairs), were occupied for five or fewer of the survey years. Among all colonies, mean duration of occupation was 12.9 ± 9.5 (SD) years, and the mean nesting population per colony was 264 ± 59.3 (SD) pairs. When a large colony was abandoned it was often because of the presence of predators on the colony island (R.T. Paul, pers. comm.). Erosion that reduced the size of the nesting island has also caused abandonment. Between 1971 and 1978, Hall Island in Brevard County, declined from 500 to 35 nesting pairs as a consequence of erosion. No pelicans have nested there since 1978. During the years of decline a new site developed at George and Brady islands 10 km southwest. The number of pairs nesting on George and Brady islands increased as the number nesting on Hall Island declined. Pelicans were pioneering a new nesting site as a traditional site was degraded by erosion (Nesbitt 1982).

Pelicans were nesting on a spoil island in the Intracoastal Waterway near Port Orange in Volusia County when the statewide survey began in 1968. The island, less than 0.5 ha in size, was covered by black mangrove (Fig. 1). Freezing temperatures on 26 December 1983, and 21 January 1985 (-7° and -9°C, respectively; recorded at the Daytona International Airport, 9 km NNW) killed all the mangroves on the island. An effort was undertaken by the city of Port Orange with guidance from Ecoshores, Inc. to restore the mangroves on the island. Between October of 1985 and March of 1986 approximately 500 black mangroves, 1-3 meters tall were planted on the island. Twelve months later an estimated 85% of the plants were still alive.

Aerial surveys by FWC documented the response of pelicans to the loss of nesting substrate. The number of pairs using this site prior to the freezes ranged from 300 to 675. Following the freezes some pairs continued to nest on the traditional site, using the standing dead mangroves (Fig. 2). Others shifted to an alternate site on a larger island 0.8 km south. This site had little, if any, mangrove habitat; instead the birds were nesting

Figures 1-5. Photo documentation of the transition from a Brown Pelican nesting colony in black mangroves (Fig. 1), to nesting in dead mangroves after they were killed by freezing temperatures, (Fig. 2), to nesting on the ground (Fig. 3), to abandonment and nesting in yaupon on a nearby island (Fig. 4), to nesting in restored mangroves (Fig. 5).

Figure 2. Brown Pelicans nesting in dead mangroves after they were killed by freezing temperatures.

Figure 3. Brown Pelicans nesting in yaupon on a nearby island.

Figure 4. Brown Pelicans nesting on the ground.

Figure 5. Brown Pelicans nesting in restored mangroves.

in yaupon (*Ilex vomitoria*) and eastern red-cedar (*Juniperus virginiana*) (Fig. 3). By 1989 nesting at the original site occurred only on the ground (Fig. 4), and by 1991 all nesting was on a mangrove island 1.5 km north. Pelicans did not use the original site again for nesting until an estimated 50 pairs nested there successfully in 1997. They were nesting in reestablished mangroves (Fig. 5). Following their return to the original site pelicans did not use either of the alternative sites for nesting. In 2001 the number of nesting pairs at the original site was estimated at 550 pairs.

Pelicans returned to the Port Orange site, soon after the mangroves had grown large enough to support nesting. This is the only instance known to us of Brown Pelicans returning to an abandoned nesting site following the human-assisted restoration of the preferred nesting substrate. From this we conclude there must be something particularly important about this site. In addition this series of events points out that not every small island in the Intracoastal Waterway in Florida is an acceptable long-term nesting site.

With only 20% of Florida nesting sites having long-term use by pelicans there seems to be a paucity of suitable nesting situations. A comparison of this site with other similar nearby sites not used by pelicans might be elucidating. It might also be beneficial to compare nesting and non-nesting sites statewide. The loss of nesting habitat, whether natural or anthropogenic could have broad reaching consequences to the population of Brown Pelicans nesting in Florida. If we are not able to recognize what constitutes preferred nesting sites for Brown Pelicans, how will we be able to preserve or recreate those characteristics if they are destroyed?

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BANDED ROYAL TERNS RECOVERED AT KEY BISCAYNE, FLORIDA

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In Florida, Royal Terns (*Sterna maxima*) occur along both the Gulf and Atlantic coasts year-round (Egensteiner et al. 1996). In winter, the local population is augmented by terns migrating from breeding colonies farther north (Van Velzen 1968, Van Velzen 1971, Clapp et al. 1983, Robertson and Woolfenden 1992, Smith et al. 1994, Bard et al. 2002a). Florida recoveries of banded migrants from Virginia (Van Velzen 1968, Smith et al. 1994, Bard et al. 2002a,b) and the Carolinas (Van Velzen 1971, Smith et al. 1994, Bard et al. 2002a,b) have been reported previously. In this note, we report data obtained from six banded Royal Terns recovered by state park staff on Key Biscayne from 1996 through 2001.

Key Biscayne is a barrier island located 5 km south of Miami Beach, along the southeastern coast of Florida. At its north end, it is linked to the island of Virginia Key by Bear Cut Bridge. The northern portion of Key Biscayne is occupied by Miami-Dade County's Crandon Park, the southern end of the island is home to Bill Baggs Cape Florida State Park, and the village of Key Biscayne occupies the land between. From March 1996 through May 2001, dead Royal Terns were opportunistically recovered by state park staff from 3 km of beach bordering the east side of the state park and village. One additional bird was recovered injured from a fishhook in December 2001; this bird was transferred to a licensed rehabilitation facility.

All six of the recovered Royal Terns had been banded while chicks at northern breeding colonies (Table 1). Three of the five dead birds were approximately in the 0.5 yr age class when recovered. Another was aged 6 yr 9 mo, and the oldest was 13 yr 9 mo. Smith et al. (1994) reviewed 41 Royal Tern band recoveries from 1979 to 1992 at Sebastian In-

Table 1. Banding locations of recovered Royal Terns.

Band number	Approximate banding location*	Date banded	Date recovered	Age at recovery
0684-01190	18 km S of Wanchese, NC	06/20/1982	03/24/1996	13 yr 9 mo
0784-44062	Lola, NC	06/26/1989	03/24/1996	6 yr 9 mo
0714-16205	18 km S of Wanchese, NC	06/28/1995	03/24/1996	0 yr 9 mo
1704-58378	Kiptopeke, VA	06/27/1996	11/02/1996	0 yr 4 mo
0814-33856	Portsmouth Island, NC	08/08/2000	05/15/2001	0 yr 9 mo
0814-46657	18 km S of Wanchese, NC**	07/02/2001	12/26/2001	0 yr 5 mo

*Locations obtained from individual USFWS recovery certificates.
**Injured bird; data obtained from bander.

let, Melbourne Beach, Florida, and reported an age range of 5 mo to 3 yr 10 mo. The age of birds recovered (n = 23) during a subset period of more intensive surveys (1989 to 1992) ranged from approximately 5 mo to 1 yr 6 mo, with a majority of approximately 0.5 yr (n = 11) and 1.5 yr (n = 7) age-class birds (Smith et al. 1994). Bard et al. (2002a) reviewed 41 additional band recoveries from 1993 to 2001 at the same Sebastian Inlet site and reported an age range of 5 mo to approximately 12 yr 7 mo, with 34 (82.9%) of these Royal Terns aged approximately 5 mo to 8 mo (0.5 yr). Likewise, all of the recoveries in Florida that Van Velzen (1968) obtained from Royal Terns banded in Virginia were less than one year old; and, most of the 21 Royal Terns banded in South Carolina (Van Velzen 1971) also were recovered in the first fall/winter after being banded. Our data show very similar age-class structure to these previous studies. However, our oldest bird (13 yr 9 mo) exceeded previous Florida reports by 1 yr 2 mo.

Three of our recoveries were of birds banded at a breeding colony near Wanchese, North Carolina, and one each at colonies near Lola and near Portsmouth Island, North Carolina. One tern was banded near Kiptopeke, Virginia. These results differ somewhat from the 23-year findings of the Sebastian Inlet study where recoveries for the aforementioned colonies ranked as follows: Wanchese 9.8%, Lola 9.8%, Portsmouth Island 7.3%, and Kiptopeke 7.3% (Smith et al. 1994, Bard et al. 2002a). However, our sample size is too small to suggest any true differentiation.

Three of our recoveries occurred on 24 March 1996 and represented all age classes we report. Due to the condition of these birds (broken wing, head/neck injuries), it appears that they died from a vehicle collision or subsequent drowning. We conjecture that perhaps they died at the Bear Cut Bridge (see Smith et al. 1994, Bard et al. 2002b) and were swept out and down-shore to their recovery sites. We also had one recovery each in the months of November, December, and May. Recoveries at Sebastian Inlet most often occurred in winter, December through February (Smith et al. 1994, Bard et al. 2002a).

Royal Terns occur around Key Biscayne year-round (R. Diaz, in litt.), though there are no known breeding colonies closer than the central Florida coast (Egensteiner et al. 1996). In winter, their numbers increase significantly. From the data presented here, it appears that the area around Key Biscayne is a wintering location for some Royal Terns migrating south from the Carolinas and Virginia, as are the areas around Ft. Pierce Inlet (H. Smith, unpubl. data), and Sebastian Inlet (Smith et al. 1994, Bard et al. 2002a,b).

Most wintering Royal Terns at Key Biscayne are seen loafing on Crandon Park's beach and on two docks adjacent to Bear Cut Bridge. They frequently are seen foraging in the waters around the bridge. Buckley and Buckley (1972:344) reported that Royal Tern breeding colonies in Virginia and North Carolina were consistently located "at or very near an inlet between bay and ocean." Smith et al. (1994) speculated a similar attraction for inlets in wintering Royal Terns at Sebastian Inlet in Melbourne Beach, Florida. Likewise, the Bear Cut inlet may influence Royal Terns to winter at Key Biscayne.

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A RECENT RECORD OF THE KIRTLAND'S WARBLER IN FLORIDA

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On 17 October 1999, we found and photographed a Kirtland's Warbler (*Dendroica kirtlandii*; Fig. 1) at Smyrna Dunes Park, Volusia County, Florida. It was more than 24 hours after Hurricane *Irene* had crossed the peninsula from west to east and headed out to sea. We arrived at Canaveral National Seashore, Volusia County around dawn and scanned the ocean from the entrance gate (the Seashore was closed due to the hurricane). Shortly after sunrise, we began to see a few Merlins (*Falco columbarius*) and Peregrine Falcons (*F. peregrinus*) flying in. Within minutes, we saw large flocks of woodwarblers coming in off the ocean, and by 08:15, several thousand birds had made landfall. Most birds fed briefly and then flew off to the north. We estimated the composition

Figure 1. First-year female Kirtland's Warbler at Smyrna Dunes Park, Volusia County, Florida, 17 October 1999. This constitutes the second verifiable record for Florida. Photograph by Kurt Radamaker.

to be 60% Palm Warblers (*Dendroica palmarum*), 15% Blackpoll Warblers (*D. striata*), 15% Cape May Warblers (*D. tigrina*), 5% Black-throated Blue Warblers (*D. caerulescens*), and 5% American Redstarts (*Setophaga ruticilla*). We also noted several Yellow-billed Cuckoos (*Coccyzus americanus*) and Gray Catbirds (*Dumetella carolinensis*) present.

We watched this flight for about an hour, then headed north to Smyrna Dunes Park. Upon our arrival at 09:45, a steady stream of wood-warblers was passing over and through the low scrub foliage at the park. At about 10:05, we discovered a Kirtland's Warbler feeding low in vegetation on the dunes. Aware of the rarity of this species in Florida, we photographed it from 5-8 m away with a Canon AE1 camera and Tamron 400 mm lens.

The Kirtland's Warbler was a robust *Dendroica*. The upperparts were gray, with fine black streaking on the forecrown, and bold streaking on the gray mantle with brown wing coverts. A narrow white eye-ring was complete except for a narrow gap behind the eye. The eyes were black. The bill was slightly decurved, with a pale pinkish base to the lower mandible. The underparts were yellow except for the white vent and a distinctive white area along the side of the breast and flanks bordering the wings (Fig 1). The throat and upper breast were lightly marked with black streaking, which became bolder on the flanks and extended to the vent. The legs and feet were blackish. Based on the pale base to the mandible, the Kirtland's Warbler appeared to have been a first-fall female (Dunn and Garrett 1997). The bird spent most of its time foraging on the ground and in low vegetation, and frequently was out of view. It called occasionally, so we knew it still was present. The call was a clear, hollow *chip*. The warbler wagged its tail constantly, similar to that of a Palm Warbler. The Florida Ornithological Society Records Committee (FOSRC) accepted our observation (FOSRC 00-403; Bowman 2000).

Kirtland's Warbler is an endangered species, breeding only in early successional jack pine (*Pinus banksiana*) forests, primarily in Crawford, Oscoda and Ogemaw counties within the Au Sable River Drainage, Michigan (Dunn and Garrett 1997). Its population, which was severely impacted by brood parasitism from Brown-headed Cowbirds (*Molothrus ater*), is recovering with cowbird control, and numbered 902 singing males in spring and summer 1999 (Tessen 1999). Kirtland's Warblers are believed to winter exclusively in the Bahamas, although uncorroborated reports exist from adjacent islands and coastal Mexico (Mayfield 1992). Most wintering observations are from the larger islands of the northern Bahamas, with most specimens from New Providence and Eleuthera, south to Caicos (Dunn and Garrett 1997). Even where they occur, Kirtland's Warblers are rarely encountered in winter, and extensive searches over the past several decades have produced few sightings (Mayfield 1996). In migration, Kirtland's Warblers are seldom observed, and most observations are near the breeding grounds in spring, when singing males are conspicuous (Dunn and Garrett 1997).

Our observation is the 20th report of a Kirtland's Warbler in Florida (Stevenson and Anderson 1994, Pranty 1998). Occurrences by months are: April (6), May (1), August (1), September (2), October (7), and November (3), although several of these reports have been questioned (Stevenson and Anderson 1994). The FOSRC has accepted three of five recent observations—our record and two reports: Hypoluxo Island, Palm Beach County on 29 April 1982 (FOSRC 82-025; Powell 1986) and Orchid Island, Indian River County on 22 April 1993 (FOSRC 93-273; Anderson 1995). Three specimens of Kirtland's Warblers purportedly have been taken in Florida, but only one of these—a male collected by Charles Cory at Jupiter Inlet, Palm Beach County on 27 April 1896 (FMNH 20515) is known extant (Stevenson and Anderson 1994). No other twentieth century report appears to have been of a bird that was photographed, so our observation constitutes only the second verifiable record in Florida. Copies of our photographs of the Kirtland's Warbler at Smyrna Dunes Park have been deposited at Tall Timbers Research Station (TTRS P742) and the Florida Ornithological Society archives at the University of Florida (_____).

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REVIEWS

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A Guide to the Identification and Natural History of the Sparrows of the United States and Canada.—James D. Rising. 1996. Academic Press, San Diego, California. 365 pp. $28.95 paper. ISBN 0-12-588971-2.

Sparrows of the United States and Canada. The Photographic Guide.—David Beadle and James D. Rising. 2002. Academic Press, San Diego, California. 328 pp. $29.95 paper. ISBN 0-12-588975-5.—Emberizine sparrows elicit mixed and often contradictory feelings among North American bird enthusiasts. Avian researchers have used several species as preferred model systems that have provided important insights into such issues as migration physiology, environmental endocrinology, avian song development, and behavioral ecology. For birders, sparrows represent an identification challenge, but they often get "little respect," being dismissed as merely "LBJ's" ("little brown jobs"). Most of these birds typically offer only fleeting glimpses as they disappear into the vegetation, so frustration may prevail as well. James Rising and David Beadle are among those rare people who find aesthetic beauty and personal satisfaction in these birds. Jim Rising, first as a young mid-westerner, and David Beadle, as an experienced birder and artist new to Canada from England, accepted the intellectual challenge represented by this difficult group. Rising later became a leading researcher on emberizine biology. Both of these men here seek to pass on their experience with and enthusiasm for North American sparrows, and thus become the unofficial "biographers" of species in this fascinating and widely distributed group.

The first guide (hereafter, Rising guide) is authored by Rising, and illustrated by Beadle's exemplary drawing and paintings. The second, more recent guide (hereafter, photographic guide) is co-authored by Beadle and Rising, and illustrated with a remarkable gallery of photographs. Apart from the illustrations, the two guides are otherwise quite similar, and are reviewed here on the basis of their respective strengths, and on how they differ from one another.

Both books are most fundamentally guides to the field identification of North American sparrows. However, the Rising guide also provides a more detailed synopsis of life history information than does the photographic guide, thus the basis for the phrase "natural history" in the former's title. The two guides cover only those emberizine sparrows and allies that occur in the continental United States and Canada. The Rising guide provides accounts for 62 species (and coverage of several other distinctive, intraspecific forms), while the photographic guide extends coverage to an Asian vagrant to Alaska, the Yellow-throated Bunting (*Emberiza elegans*), and to a proposed split from the Fox Sparrow, the Thick-billed Fox Sparrow (*Passerella megarhyncha*), native from SW Oregon to south California. Both guides follow the current taxonomic and nomenclatural decisions of the A.O.U.'s Committee on Classification and Nomenclature (CCN), with two major exceptions: three (Rising guide) or four (photographic guide) additional *Passerella* species are recognized (as in Thick-billed Fox Sparrow mentioned above), based on Robert Zink's work, and Bell's Sparrow (*Amphispiza belli s.s.*) is split out of the Sage Sparrow (previously *A. belli s. l.*, here *A. nevadensis*). I am not sure that taxonomic innovation is appropriate in publications designed as popular natural history guides. It is clear that Rising is persuaded by Zink's findings, but the cynical view is that the authors also chose to anticipate the likely future decisions of the CCN and thus avoid having their guides become taxonomically "outdated" soon after release, a fate often suffered by earlier field guides to birds.

Although the "preambles" of the two guides address similar concerns (e.g., "What are sparrows?") and share the same illustrations (sparrow topography), the differences in these pages are more significant and reflect their respective emphases. As befits its

broader scope, the Rising guide provides an informative, unreferenced summary of emberizine sparrow biology in a separate chapter. The photographic guide, in contrast, features a discussion of identification problems, and a useful synoptic overview of the 19 emberizine genera represented north of Mexico. This is followed by four pages of habitat photographs, which, although pleasing to look at, may be of dubious value in a guide to identification.

The species accounts and illustrations constitute the "working" parts of these guides. These accounts focus on species with one major exception: there are five full accounts in the photographic guide (subheadings in the Rising guide) for the Dark-eyed Junco (*Junco hyemalis*) (one each for "Slate-colored," "White-winged," Gray-headed," "Pink-sided," and "Oregon" juncos). In the Rising guide, a page devoted to each major genus, as a lead-in to the accounts of its constituent species, is a valuable innovation. Here there are remarks on number of species in the genus, on shared characteristics among them, and on current knowledge about relationships within the group.

Although there is much that is similar in the corresponding accounts in the two guides, differences in formatting, emphasis, and substance are especially significant. The Rising guide presents information on each species under 10 headings and in two maps (range map, BBS relative abundance map), while the photographic guide uses 12 headings and one (range) map. The text in the photographic guide has been revised where appropriate, but otherwise it is very close to (in some cases, the same as) corresponding passages in the Rising guide. Major differences in text are associated with two unique headings ("Breeding," "History") in the Rising guide, and with three ("Molt," "Hybrids," "Conservation Status") in the photographic guide. The brief description of nest, eggs, incubation, and parental roles in the nest cycle under "Breeding" in the Rising guide fills out each account, but this information is widely available elsewhere. In contrast, Rising's remarks on the taxonomic history ("History") of each species bring together scattered historical and background information, often from obscure sources, and provide interesting reading. This section is an innovative and useful contribution to modern readers who are often unfamiliar with older ornithological literature.

Identification using these guides depends on the combination of effective description in the text that focuses on sexual, seasonal, and geographic variation, and excellent annotated illustrations. Field-visible plumage sequence in most emberizine sparrows is fairly simple, often involving only a contrast between Juvenal versus adult plumages. Sexual variation is important in a few species, but not in most. Geographic variation is often significant, however, and is well characterized by Rising. The subject of molt is addressed explicitly only in the photographic guide, but this is not a drawback in the Rising guide since information on the timing of plumage acquisition is provided. Plumage descriptions are made more readable, and comparisons across species are facilitated, by the liberal use of bolded topographical headings in both books. One unfortunate distraction in the descriptions is the confused use of the familiar word "back." A distinction is implied in the illustrations of sparrow topography between the "mantle" (upper back between scapulars) and "back" (evidently lower back). This distinction is not applied in the text, where we usually see "back" being used as a substitute for "upperparts" or "dorsum." In turn, the recently redefined word "mantle" (e.g., Cramp 1977) is used in the text merely as a synonym for "back" as commonly applied. Perhaps the real issue here surrounds the word "mantle," and the problems that arise when an old, established usage is jettisoned, and the word is co-opted to serve a new role in avian topography. "Mantle" traditionally is used in reference to species such as gulls and terns in which back, scapulars, and upper secondary coverts are distinctively colored (e.g., Coues 1903:101, Thomson 1964:828). Roger Peterson popularized this usage in his field guide descriptions of gulls and terns. A century ago, Coues (1903:100) remarked that the distinction between upper back and lower back is "not practically useful" in plumage descriptions. These guides bear out this observation.

Range maps are provided in both guides for all species that breed in the continental United States and Canada. The only apparent exception is Worthen's Sparrow (*Spizella wortheni*), which is a Mexican species with only one old historical record in New Mexico. There is no mention of this record (type specimen) in the photographic guide, thus leaving the reader to wonder why this Mexican species but not others was included in the guide. Rising evidently believes that the species formerly bred in the United States (Rising guide), but this is speculation (e.g., listed as a vagrant in A.O.U. 1998). The maps in the photographic guide are especially well executed, and updated from those in the Rising guide. However, the latter guide provides a valuable bibliographic resource by collecting citations used to delineate distributions in a special section.

Illustrations are the foundation of any good identification guide. Beadle's paintings and drawings in the Rising guide are excellent. They realistically portray the shapes and postures of the birds, and clearly show details of color and pattern. For the first time, age, sex and significant geographic variations among sparrows are covered in a single source. The portrayal of juveniles alone represents a major contribution. The photographic guide's approach to illustration is very different from that of the Rising guide. An array of well-chosen photographs covers the same plumage variation, including three of hybrid *Zonotrichia*. Again, the Juvenal plumage of most species is represented. As many as 18 (Song Sparrow [*Melospiza melodia*]), 19 (Savannah Sparrow [*Passerculus sandwichensis*]), or 23 (Dark-eyed Junco [*Junco hyemalis*]) photographs illustrate variation in the most geographically variable species. Two to five photographs per species represent even the Asian vagrants.

Overall, these two books are valuable additions to the genre of taxon guides to groups of birds. Although there is significant textual duplication, the differences are worth emphasizing. Together, they provide a useful summary of natural history for bird enthusiasts, and an excellent array of illustrations that address plumage variation. Although some typographic errors appear in the texts, they are relatively few. Birders have a choice of guide, depending on whether one prefers paintings or photographs. Anybody who is particularly fascinated by this interesting and challenging group of birds will want to own both guides. I recommend them highly.—**Jon S. Greenlaw,** 2813 SW 43rd Lane, Cape Coral, Florida 33914.

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FIELD OBSERVATIONS

Winter report: December 2001-February 2002.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December-February), spring (March-May), summer (June-July), and fall (August-November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers are found at the end of this report. We greatly prefer observations sent via e-mail.

Sight-only observations are considered "reports" while only those supported by verifiable evidence (photographs, video or audio tapes, or specimens) are called "records." Species for which documentation is required by the FOS Records Committee (FOSRC; Bowman 2000, *Fla. Field Nat.* 28:149-160) are marked here with an asterisk (*). A county designation (*in italics*) accompanies the first-time listing of each site in this report. Abbreviations in this report are: CBC (Christmas Bird Count); CP (county park); ENP-E (Everglades National Park, *Miami-Dade*); ENP-W (Everglades National Park, *Monroe*); EOS (end of season); LARA (Lake Apopka Restoration Area; *Orange*); NWR (national wildlife refuge); PPM (*Polk* phosphate mines); SP (state park); SRA (state recreation area); STF (sewage treatment facility); and N, S, E, W etc., for compass directions. Bold-faced species denote birds newly reported or verified in Florida, or record counts.

Summary of the Winter Season

The season was extremely variable, with temperatures hot one week and below freezing (even into the central peninsula) the next. There were even a few cold fronts that brought substantial rain. Several "mega-rarities" were reported this winter, including a California Gull at Pensacola, Ruddy Quail-Dove and Northern Saw-whet Owl in *Broward*, and a Lazuli Bunting at Lake Apopka. A Pink-backed Pelican, native to Africa and probably an escapee, was photographed at Naples. Other interesting observations were 25 species of wood-warblers variously in southeastern Florida; a banding trip 11-16 Jan by Fred Bassett that resulted in the banding of 27 hummingbirds including 14 Rufous, 8 Black-chinned, and 1 Allen's (another Allen's was banded by Bassett the previous week); Rose-breasted Grosbeaks photographed in *Brevard* and *Collier*; and a Rosy-crested Pochard in *Lee* and a hybrid Lady Amherst's × Golden Pheasant at Miami.

With the FOC's virtual abandonment of Internet lists as a source of bird observations, we will increase efforts to contact conscientious members of the Florida birding community to ensure that their observations become part of the permanent ornithological record. This winter report includes several CBC reports now that the FOC has access to all CBC documentation forms. CBC reports not submitted directly to the FOC are listed as "CBC data" and only the most significant observations are included to avoid excessive duplication between *Florida Field Naturalist* and *American Birds*.

Species Accounts

Red-throated Loon: 1 at Cedar Key (*Levy*) 7 Dec (M. Meisenburg); 1 at Boca Grande (*Escambia*) 22 Dec (P. Baker et al.); 3 along the Jacksonville (*Duval*) coast 29 Dec (*fide* P. Powell); 10 at Alligator Point (*Franklin*) 18 Jan (D. Powell, B. Ahern, R. Webb); 1 in a Tallahassee pond (*Leon*) 26 Jan-5 Feb (A. Turner et al.); 1 at Fort Island Beach (*Citrus*) 6 Feb (M. Gardler, J. Gaetzi).

Pacific Loon: 1 at Fort Walton Beach (*Okaloosa*) 17 Dec (W. Duncan, L. Dougherty).
Common Loon: 72 at Lake Weir (*Marion*) 28 Dec (E. Scales et al.).
Pied-billed Grebe: 185 at PPM 3 Dec (P. Fellers).
Horned Grebe: **644** at Lake Weir 28 Dec (E. Scales et al., details to FOC).
Eared Grebe: 19 at PPM 3 Dec (P. Fellers); 1 at Fort Walton Beach STF to 17 Dec (B. Bremser); 1 at Newnans Lake (*Alachua*) 4 Jan (A. Kratter et al.).
Cory's Shearwater: 1 off Dania (*Broward*) 5 Dec (W. George, R. MacGregor).
Northern Gannet: 600 off Fort Pickens (*Escambia*) 23 Dec (S. Haywood).
American White Pelican: 2000 at PPM 11 Feb (P. Fellers); up to 31 foraged in small seasonal wetlands at Buck Island Ranch (*Highlands*) for most of Feb (M. McMillian).
Brown Pelican: 1 at Gainesville (*Alachua*) in Dec (E. Scales); 1 at LARA 24 Jan (H. Robinson).
Pink-backed Pelican (*Pelecanus rufescens*): 1 at Naples (*Collier*) 29 Dec (T. Below, photos to FOSRC) furnished the first North American report (AOU *Check-list*, 1998). The species is native to Africa but several individuals occur in captivity in Florida and elsewhere.
Great Cormorant: 1 immature at the St. Johns River mouth, Jacksonville 24-29 Dec (B. Richter, photo to FOC).
Least Bittern: 1 at St. Marks NWR (*Wakulla*) 5 Jan (D. Morrow et al.).
Roseate Spoonbill: 1 adult at Buck Island Ranch 26 Feb (B. Carlton).
Black-bellied Whistling-Duck: 12 at Ellenton (*Manatee*) 15 Dec (W. Stinehelfer); 14 at PPM 6 Jan (P. Timmer, C. Geanangel, L. Albright) and 26 Jan (P. Fellers et al.).
Greater White-fronted Goose: 2 at Tallahassee 18 Dec (J. Cavanagh); 1 at Lake Jackson and vicinity (*Leon*) 3 Feb (J. Cavanagh et al.).
Snow Goose: 10 (8 white and 2 blue) near Bartow (*Polk*) 10 Dec (S. Riffe); 20 in E *Polk* remained to 1 Jan (F. and R. Clark)—the size and composition of the flock changed frequently; 5 (4 white and 1 blue) at Honeymoon Island SRA (*Pinellas*) 22 Dec-EOS (E. Kwater et al.).
Canada Goose: 10 near Bartow 10 Dec (S. Riffe); 6 at W Jacksonville 11 Jan (J. Holstein).
Tundra Swan: 1 immature at Springhill Road STF, Tallahassee 14-24 Jan (E. Shaw, C. Snow et al.).
Muscovy Duck: a brood of day-old chicks at Brandon (*Hillsborough*) 6 Dec (B. Pranty).
American Black Duck: 1 near Lake Placid (*Highlands*) 27 Dec (CBC data); 1 at LARA to 20 Jan (H. Robinson).
Northern Shoveler: 1200 at PPM 10 Jan (P. Fellers et al.).
*White-cheeked Pintail: 1 at Pembroke Pines (*Broward*) 29 Dec-5 Feb was considered an escapee (W. George et al.).
Gadwall: 198 at Apalachicola Bay (*Franklin*) 6 Dec (G. Beaton); 105 at PPM 6 Jan (P. Timmer, C. Geanangel, L. Albright).
Eurasian Wigeon: 1 male at Merritt Island NWR (*Brevard*) 10 Feb (J. Holstein et al.).
American Wigeon: 600 at PPM 23 Jan (P. Fellers et al.) had declined to few dozen by early Feb (*fide* C. Geanangel).
Redhead: 18 at LARA 3 Jan (H. Robinson).
Rosy-billed Pochard: 1 male photographed at Bonita Springs (*Lee*) 20 Feb (D. Suitor).
Rosy-crested Pochard (*Metta rufina*): 1 female photographed at Bonita Springs 20 Feb (D. Suitor).
Ring-necked Duck: 850 at PPM 3 Dec (P. Fellers et al.).
Greater Scaup: up to 3 at LARA to 16 Jan (H. Robinson).
Lesser Scaup: 4650 at PPM 10 Jan (P. Fellers et al.).
Long-tailed Duck: 2 at Cedar Key 28 Dec (A. Kratter et al.); 1 at Palm Harbor (*Pinellas*) 31 Jan ff (I. Hernandez); 1 male at Titusville (*Brevard*) 10 Feb (J. Holstein et al.).
Black Scoter: 25 flew S by Lauderdale-by-the-Sea (*Broward*) 4 Dec (W. George); 10 flew N by Dania 5 Dec (W. George, R. MacGregor); 4 at Alligator Point 6 Jan (M. Meisenburg et al.).

SURF SCOTER: 1 at N Jacksonville 29 Dec (R. Clark); 3 at Alligator Point 6 Jan (J. Murphy).
WHITE-WINGED SCOTER: 1 at St. Marks NWR 8 Dec (B. Bergstrom et al.).
COMMON GOLDENEYE: 1 female at Punta Gorda (*Charlotte*) 15 Dec (J. Bouton); 1 female at Tallahassee 6 Jan (G. Menk); 16 at Fort Island Beach 6 Feb (M. Gardler, J. Gaetzi).
BUFFLEHEAD: 58 at Lake Weir 28 Dec (E. Scales et al.); 6 at Lake Pierce (*Polk*) 29 Dec (J. Dubois); 5 at PPM 10 Jan (P. Fellers).
HOODED MERGANSER: 375 at PPM 6 Jan (P. Timmer, C. Geanangel, L. Albright).
RED-BREASTED MERGANSER: 1 at Gainesville 10 Dec (A. Kratter).
RUDDY DUCK: 4260 at Auburndale (*Polk*) 14 Dec (P. Fellers); 2400 at PPM 10 Jan (P. Fellers).
SWALLOW-TAILED KITE: 1 at Blue Cypress Lake (*Indian River*) 31 Jan (N. Sekera et al.) was extremely early or wintering; 1 at Tallahassee 20 Feb (R. Lengacher); 5 at Bald Point (*Franklin*) 20 Feb (J. Dozier); 1 at Golden Aster Scrub Preserve (*Hillsborough*) 21 Feb (G. Caddick); several at Golden Gate Estates (*Collier*) 23 Feb (T. Doyle).
WHITE-TAILED KITE: 2 at their traditional breeding site at Pembroke Pines Mitigation Landbank (*Broward*) mid-Dec ff (W. George et al.); 2 adults along Government Road (*Broward*) in Jan-Feb (J. Swarr et al.).
SNAIL KITE: 1 banded juvenile at Lake Pierce 1 Jan (D. Pierce, S. Huxtable).
BROAD-WINGED HAWK: 1 "tame" immature at Bayonet Point (*Pasco*) 5 Dec (M. Gardler); 1 immature at Alva (*Lee*) 21 Jan-EOS (C. Ewell, A. Salcedo et al.).
SHORT-TAILED HAWK: 1 light morph near Naples (*Collier*) 26 Jan (T. Doyle); 1 dark morph at Peace River Park (*Polk*) 31 Jan (T. Palmer).
SWAINSON'S HAWK: up to 34 Frog Pond WMA (*Miami-Dade*) 1-16 Dec (L. Manfredi et al.).
RED-TAILED HAWK: 1 Krider's SW of Clewiston (*Hendry*) 20 Jan ff (R. Smith, B. Hoffman, L. Atherton).
CRESTED CARACARA: 2 juveniles N of Lake Jessup (*Seminole*) 29 Dec (CBC data); 1 along Government Road, Big Cypress Seminole Indian Reservation, 4-13 Jan (P. Murphy et al.) was the second *Broward* report; 1 pair nested in a Cabbage Palm E of Sanford (*Seminole*) in Feb, but the nest was abandoned by 2 Mar (*fide* R. Grimshaw)—this seems to be the northernmost breeding attempt reported in Florida.
PEREGRINE FALCON: up to 4 at PPM through 24 Feb (P. Fellers, C. Geanangel, P. Timmer et al.).
LADY AMHERST'S PHEASANT (*Chrysolophus amherstiae*) × **GOLDEN PHEASANT:** 1 hybrid at Miami in Jan (L. Regalado, photos to FOC).
BLACK RAIL: 2 at Weekiwachee Preserve (*Hernando*) 19 Dec (B. Pranty, D. Powell, B. Ahern).
CLAPPER RAIL: 1 at Eco Pond, ENP-W 5 Jan-9 Feb (*fide* J. Boyd).
VIRGINIA RAIL: 1 at Wakodahatchee Wetlands (*Palm Beach*) 12 Jan-EOS (*fide* J. Boyd).
PURPLE GALLINULE: 1 adult at Edward Ball Wakulla Springs SP (*Wakulla*) 28 Dec (R. Lengacher); 1 adult at Lake Weir 28 Dec (E. Scales, photo to FOC).
AMERICAN COOT: 32,000 at PPM 3 Dec (P. Fellers) had declined to 800 by early Feb (*fide* C. Geanangel); 1 downy chick at Pembroke Pines 3-9 Jan (K. Schnitzius, photos to FOC).
SANDHILL CRANE: 35 in NE *Jefferson* 3 Jan (R. Atchison); 3 at St. Augustine (*St. Johns*) 18 Jan (J. Holstein); 7 in *Walton* 22 Jan (C. Snow); 45 flying N over Madison (*Madison*) 2 Feb (G. Menk); 1 wintered at Jacksonville (J. Cocke).
AMERICAN GOLDEN-PLOVER: 1 at ENP-E 19 Dec (J. Boyd).
WILSON'S PLOVER: 70 at Honeymoon Island SRA 9 Feb (P. Fellers et al.).
PIPING PLOVER: 1 at Pine Island Park (*Hernando*) 18 Dec-21 Feb (B. Pranty, A. and B. Hansen et al.).
BLACK-NECKED STILT: 5 at PPM 2 Feb (P. Fellers et al.).
AMERICAN AVOCET: 2 at Carrabelle Beach (*Franklin*) 9 Dec (G. Sprandel); up to 7 at Springhill Road STF 18-22 Dec (G. Menk et al.); 42 at Jacksonville 29 Dec (B. Richter); 323 at PPM 10 Jan (P. Fellers).

Whimbrel: 35 at Honeymoon Island SRA 22 Dec (E. Kwater); 3 at Green Key, New Port Richey (*Pasco*) 24 Dec-2 Feb (K. Tracey, R. Smart).

Marbled Godwit: 5 at Anclote Gulf Park (*Pasco*) 2 Dec (K. Tracey).

Western Sandpiper: 415 at PPM 6 Jan (P. Timmer, C. Geanangel, L. Albright).

Purple Sandpiper: 1 at Boynton Inlet (*Palm Beach*) to 8 Dec (*fide* J. Boyd.); 1 at Rickenbacker Causeway (*Miami-Dade*) 15 Dec (B. Rapoza, J. Boyd); 2 at St. Lucie SP (*St. Lucie*) 29 Dec (P. Merritt, photo to FOC); 3 at New Smyrna Beach (*Volusia*) 23 Jan (M. Gardler).

Stilt Sandpiper: 3 near Withlacoochee River CP (*Pasco*) 8 Dec-4 Jan (R. Smith et al.); 188 at PPM 6 Jan, and 77 there 24 Feb (both P. Timmer, C. Geanangel); 1 at St. Marks NWR 16 Feb (G. Menk).

Long-billed Dowitcher: 130 at PPM 7 Feb (P. Fellers et al.).

American Woodcock: 1 called at Boyd Hill Nature Park, St. Petersburg (*Pinellas*) 15 Dec (R. Smith et al.; several males displayed at Weekiwachee Preserve 16 Dec-EOS (B. Ahern, A. and B. Hansen et al.).

Pomarine Jaeger: 1 adult light morph off Key Biscayne (*Miami-Dade*) 9 Dec (R. Diaz); singles in *Pasco* at Anclote River Park 18 Jan and Green Key 4 Feb (both K. Tracey); 1 adult at Naples 3 Jan (H. McGuinness).

Parasitic Jaeger: 2 at Honeymoon Island SRA 22 Dec (E. Kwater); 1 dark morph at Naples 3 Jan (H. McGuinness).

Franklin's Gull: 1 at Naples 29-30 Dec (H. McGuinness, W. Burkett et al.); 1 first-winter bird at the *Miami-Dade* landfill 17 Jan (L. Manfredi).

*Black-headed Gull: 1 adult at Sebastian Inlet SRA (*Brevard* and *Indian River*) 15 Feb ff (*fide* D. Hull, photos to FOC by H. Bechtel).

Bonaparte's Gull: 80 Lassing Park, St. Petersburg 3 Feb (R. Smith).

*Heermann's Gull: 1 at Sanibel Island (*Lee*) 2 Dec (D. Hanson, photos to FOC), Naples 7 Dec (*fide* C. Ewell), Fort De Soto CP 23 Jan-8 Feb (L. Atherton), then Captiva Island (*Lee*) 19 Feb (V. McGrath).

*California Gull: 1 adult at Pensacola Beach 5 Feb (B. Duncan, details to FOC).

*Thayer's Gull: 1 at Fort De Soto CP to 7 Dec (*fide* L. Atherton).

Lesser Black-backed Gull: 1 third-winter bird at the *Miami-Dade* landfill 5 Dec was thought to be either *intermedius* or *fuscus* (J. Boyd); 1 at LARA 16 Jan (H. Robinson); 1 adult at New Port Richey to 23 Jan (K. Tracey et al.); 2 first-year birds at Naples 29 Dec (H. McGuinness); 1 at Steinhatchee (*Taylor*) 1 Feb (B. and L. Duncan).

Sabine's Gull: 1 at Boynton Inlet 1-2 Dec (*fide* J. Boyd).

Gull-billed Tern: 1 at Green Key Park 11 Dec-3 Feb (K. Tracey, R. Smart et al.); 1 at Dunedin Causeway (*Pinellas*) 18 Dec (W. Yusek); 1 at Pine Island Park 6 Jan (C. Black); 11 at PPM 20 Jan (P. Fellers).

Caspian Tern: 355 at PPM 10 Jan (P. Fellers).

Royal Tern: 1 over Avon Park Air Force Range (*Highlands*) 3 Jan (CBC data); 21 at PPM 10 Jan (P. Fellers); 4 at Banana Lake Park (*Polk*) 31 Jan (T. Palmer).

Sandwich Tern: 2 at Pine Island Park 10 Dec (A. and B. Hansen).

Common Tern: **54** on the St. Petersburg CBC 15 Dec (B. Pranty et al., videotape of 24 birds to FOC); 2 at Green Key 2 Jan (M. Gardler); 1 at Canaveral National Seashore (*Brevard*) 4 Jan (CBC data).

Forster's Tern: 260 at LARA 16 Dec (H. Robinson); 476 at PPM 10 Jan (P. Fellers).

Black Tern: 1 at Ten Thousand Islands NWR (*Collier*) 5 Jan (CBC data); 1 at Pompano Beach (*Broward*) 10 Jan (W. George et al.).

Black Skimmer: 375 at PPM 3 Dec (P. Fellers).

White-crowned Pigeon: 1 at Port Orange (*Volusia*) 1 Feb (K. Doxstater, photo to FOC) was the northernmost report along the Atlantic coast; at least 2 at Collier-Seminole State Park (*Collier*) 9 Feb (*fide* T. Doyle).

Ringed Turtle-Dove: 1 at Weeki Wachee (*Hernando*) 27 Feb (M. Gardler).

WHITE-WINGED DOVE: 1 at Bald Point 18 Dec (J. Dozier); 1 at Hudson for most of Dec (D. Malone, K. Tracey et al.).

*RUDDY QUAIL-DOVE: 1 at Birch State Park, Fort Lauderdale (*Broward*) 11-12 Jan (W. George [details to FOC], R. MacGregor).

BUDGERIGAR: 1 at Port of the Islands (*Collier*) 3 Jan (H. McGuinness).

COCKATIEL: 1 at Palatka (*Putnam*) 11 Dec (*fide* S. P. MacCumhail); 1 feeding on the ground at St. Petersburg with 120 Monk and 30 Black-hooded parakeets 23 Dec (A. and R. Smith).

MONK PARAKEET: 64 at Anclote (*Pasco*) 6 Dec (K. Tracey); at least 10 at a nest at Black Hammock Island, Jacksonville 29 Dec (N. and T. Shuler); *ca.* 12 birds 3 km NNE of Palmetto Point, and *ca.* 6 at Parrish in recent months were new locations in *Manatee* (W. Stinehelfer).

BLUE-CROWNED PARAKEET: ≥6 at Jetty Park (*Brevard*) 2 Dec (C. and K. Radamaker, photos to FOC); 1 at Naples 3 Jan (H. McGuinness).

RED-MASKED PARAKEET: ≥1 at Jetty Park 2 Dec (C. and K. Radamaker, photos to FOC).

WHITE-EYED PARAKEET: ≥5 at Jetty Park 2 Dec (C. and K. Radamaker, photos to FOC); 5 at Naples 3 Jan (H. McGuinness).

BLACK-HOODED PARAKEET: 6 at Wakodahatchee Wetlands (*Palm Beach*) 21 Jan (J. Bouton et al.); 2 at Anclote (*Pasco*) occupied the same cavity used as a nest last year, 2 Feb (K. Tracey, photo to FOC).

GROOVE-BILLED ANI: 2 at St. George Island (*Franklin*) 29 Dec-12 Jan (T. Lewis, K. Malone et al.).

*NORTHERN SAW-WHET OWL: 1 at Lighthouse Point (*Broward*) 26 Dec was shaken out of a tree by a passing truck and was recovered by two police officers driving by (!). The owl was taken to a wildlife rehabilitator and was released at Fort Lauderdale 28 Dec (C. Rohkamm, photo to FOC).

LESSER NIGHTHAWK: 1 in S *Hillsborough* 16 Dec (CBC data); 1 along the NW shore of Lake Apopka (*Lake*) 29 Dec (CBC data); 2 at Cedar Key 28 Dec (J. Hintermister, D. Morrow, R. Christen); 1 at Loxahatchee NWR (*Palm Beach*) 29 Dec (B. Hope); up to 10 at the *Miami-Dade* landfill 8-10 Jan (L. Manfredi, J. Boyd); up to 12 wintered at Flamingo, ENP-W (*fide* J. Boyd).

CHUCK-WILL'S-WIDOW: 1 sang at Bayard Point (*Clay*) 19 Feb (L. McCullagh); 1 sang at Golden Gate Estates 20 Feb (T. Doyle).

WHIP-POOR-WILL: 1 sang at Golden Gate Estates 27 Jan and 21 Feb (T. Doyle, K. O'Reilly-Doyle).

BUFF-BELLIED HUMMINGBIRD: 1 at Gulf Breeze (*Santa Rosa*) 3 Jan (B., L., and W. Duncan); 1 at Melbourne (*Brevard*) for 10 days in Jan (B. and S. Hills).

RUBY-THROATED HUMMINGBIRD: 1 banded at Tallahassee 11 Jan (F. Bassett); 3 at Valrico (*Hillsborough*) 14 Jan, with 1 banded (S. Backes, F. Bassett); up to 4 wintered at Lakeland (J. Misiaszek); 1 immature male wintered at Jacksonville (M. Davidson).

BLACK-CHINNED HUMMINGBIRD: up to 2 immature males at Spring Hill (*Hernando*) 6 Dec-4 Jan (A. and B. Hansen, P. Young et al.); 3 banded at Tallahassee 11 Jan, and another banded 19 Jan (all F. Bassett); 1 banded at Apalachicola (*Franklin*) 11 Jan (F. Bassett); 1 immature male banded at Valrico 14 Jan (S. Backes, F. Bassett); 1 banded at Merritt Island 15 Jan (F. Bassett); 1 adult male at Alligator Point to Mar (J. Murphy et al.).

*BROAD-TAILED HUMMINGBIRD: 1 adult female banded at Pensacola 25 Feb (F. Bassett).

RUFOUS HUMMINGBIRD: 1 at Alachua (*Alachua*) 31 Dec (B. Wallace); 7 banded at Tallahassee 9-11 Jan (all F. Bassett); 1 at Spring Hill 14 Jan-EOS (banded by F. Bassett); 2 at Shady Hills (*Pasco*) 23 Dec-18 Jan (S. Maloni, K. and L. Tracey et al., photos to FOC); 1 adult male at New Port Richey 10 Jan (K. Tracey, photo to FOC); 1 female banded at Valrico 14 Jan (S. Backes, F. Bassett); 1 found dead at Brooksville (*Hernando*) 18 Jan (K. Cannon, to UCF).

*Allen's Hummingbird: 1 adult male banded at Pensacola (*Escambia*) 5 Jan (F. Bassett); 1 second-year male banded at Bald Point 9 Jan-EOS (J. Dozier, F. Bassett et al.).

Selasphorus species: 1 photographed at Melrose (*Putnam*) 28 Dec (CBC data); 1 at Lake City (*Columbia*) to 31 Dec (J. Krummrich).

Yellow-bellied Sapsucker: 20 along Arbuckle Creek (*Highlands* and *Polk*) 3 Jan (B. and L. Cooper).

Least Flycatcher: 1 at Paynes Prairie Preserve SP (*Alachua*) 23 Dec (E. Scales); 1 near Oviedo (*Seminole*) 29 Dec (B. Anderson); 1 at Emeralda Marsh 21 Jan (J. Puschock); up to 5 (27 Jan) wintered at LARA (H. Robinson); at least 2 wintered at Frog Pond WMA (L. Manfredi); 1 wintered at Eco Pond, ENP-W (*fide* J. Boyd).

Empidonax species: 1 at Lake Talquin State Forest (*Leon*) 24 Feb (G. Menk).

Eastern Phoebe: 139 at LARA 2 Dec (H. Robinson).

Vermilion Flycatcher: 1 adult male at Tiger Point (*Santa* Rosa) 15 Dec (B. Bremser); 1 at Belle Glade Marina (*Palm Beach*) 15 Dec-3 Feb (L. Most et al.); 1 at Paynes Prairie 16 Dec-3 Feb (G. McDermott, M. Meisenburg); 1 female at Myakka River SP (*Sarasota*) 17 Dec-4 Mar (C. Everly et al.); 1 male along Government Road (*Hendry*) 29 Dec-EOS (*fide* C. Ewell); 1 adult male in *Gulf* 9 Jan (L. Duncan); 1 wintered at LARA (H. Robinson et al.).

Ash-throated Flycatcher: 1 W of Boynton Beach (*Palm Beach*) 9 Dec (B. and J. Hope); 1 at Paynes Prairie 16 Dec-23 Jan (J. Hintermister et al., photos to FOC by E. Scales); 1 at Fort Walton Beach STF 27 Dec-23 Jan (B. Duncan, D. Ware); 1 near Oviedo 29 Dec (B. Anderson); 1 W of Delray Beach (*Palm Beach*) 30 Dec (B. Hope); 1 off Government Road (*Hendry*) 4 Feb (W. George); 1 at Emeralda Marsh 20 Jan (J. Puschock), and 2 there 11 Feb (M. Gardler); up to **9** (20 Jan) wintered at LARA (H. Robinson).

Great Crested Flycatcher: 1 at Kelly Park (*Orange*) 23 Dec (B. Anderson); 30 on the Lake Placid CBC 27 Dec (CBC data); 4 along Arbuckle Creek 3 Jan (B. and L. Cooper).

Brown-crested Flycatcher: 1 at Frog Pond WMA 14-27 Dec (L. Manfredi, D. Powell et al.); 1 W of Delray Beach 3 Feb (B. Hope).

La Sagra's Flycatcher: 1 near Loxahatchee NWR 25 Dec-EOS (B. Hope et al.); 1 at Matheson Hammock 20 Feb (P. Blair, W. Yusek).

*Tropical Kingbird: 1 remained at St. Marks NWR through the winter (*fide* G. Menk).

*Tropical/Couch's Kingbird: 1 at LARA 9 Dec (H. Robinson); 1 at Goodwin WMA (*Brevard*) 16 Jan (S. Rowe).

*Cassin's Kingbird: 1 at LARA 2 Dec-3 Feb (H. Robinson, C. and K. Radamaker et al., photos to FOC); 1 at Homestead (*Miami-Dade*) 21 Feb (J. Boyd).

Western Kingbird: 1 at Lake Istokpoga (*Highlands*) 2 Dec ff (F. Lohrer et al.); singles at Bald Point 4 and 9 Dec (J. Dozier, J. Murphy); 1 at Alligator Point 9 Dec (J. Murphy); 1 S of Palm Bay (*Brevard*) 20 Dec (S. Rowe); 1 at Turkey Point (*Franklin*) 24 Dec (J. Murphy); 2 at Paynes Prairie to 27 Dec (D. Steadman); 1 near Red Level (*Citrus*) 1 Jan (C. Black); 1 at PPM 12 Jan (P. Timmer, C. Geanangel et al.); singles at Trenton (*Gilchrist*) and Chiefland (*Levy*) 13 Jan (C. Graham); 12 W of Delray Beach 14 Jan (B. Hope); 3 at Buck Island Ranch 17 Jan (M. McMillian); 1 at St. Petersburg (*Pinellas*) 28 Jan (R. Smith); up to 7 wintered along Government Road (*fide* C. Ewell); up to **72** (27 Jan) wintered at LARA (H. Robinson), the highest Florida count.

Scissor-tailed Flycatcher: 2 at Lake Istokpoga 2 Dec ff (M. McMillian et al.); 2 at Seven Springs (*Pasco*) 5 Dec ff (K. Tracey et al.); 6 at Homestead (*Miami-Dade*) 27 Dec (D. Powell); 1 at High Springs (*Alachua*) 13 Jan (C. Graham); 3 W of Delray Beach 14 Jan (B. Hope); up to 2 at LARA 16 Jan-EOS (H. Robinson); up to 7 wintered along Government Road (*fide* C. Ewell).

Bell's Vireo: 1 W of Delray Beach 2 Dec (B. Hope); 1 at Mahogany Hammock, ENP-E 19 Dec (CBC data); 1 wintered at Frog Pond WMA (*fide* J. Boyd, photo to FOC by S. Siegel).

Purple Martin: 2 or more at Tampa (*Hillsborough*) 16 Jan (D. Wassmer, L. Saul); 2 at Springhill STF 26 Jan (G. Menk).

NORTHERN ROUGH-WINGED SWALLOW: 1 E of Dade City (*Pasco*) 8 Dec (B. Hoffman, R. Smith).

BANK SWALLOW: 1 at Delray Beach 5 Jan (W. George); 1 at the *Miami-Dade* landfill 9 Jan (L. Manfredi).

CLIFF SWALLOW: 1 at the *Miami-Dade* landfill 9 Jan (L. Manfredi).

CAVE SWALLOW: >200 at the *Miami-Dade* landfill 9 Jan (L. Manfredi).

RED-BREASTED NUTHATCH: 1 at Eastpoint (*Franklin*) 17 Feb (S. Klink).

MARSH WREN: 1 at Lake Jackson 9 Dec-8 Jan (R. Lengacher, G. Menk).

GOLDEN-CROWNED KINGLET: 1 at Brooker Creek Preserve (*Pinellas*) 22 Dec (CBC data); 1 at Big Shoals Public Lands (*Hamilton*) 12 Jan (J. Hintermister); 1 at O'Leno SP (*Alachua*) 9 Feb (J. Hintermister).

HERMIT THRUSH: 2 sang in N *Leon* 6 Dec (R. West, G. Menk).

WOOD THRUSH: 1 wintered at Birch SP (W. George et al.).

COMMON MYNA: 30 in a flock N of Homestead 20 Jan (J. Bouton).

HILL MYNA: "numerous groups" at Matheson Hammock CP 22 Jan included one flock of 12 (J. Bouton et al.).

AMERICAN PIPIT: 12 at Frog Pond WMA 1 Dec (L. Manfredi); 257 at LARA 13 Jan (H. Robinson).

SPRAGUE'S PIPIT: 4 at Eglin Air Force Base (*Okaloosa*) 9 Feb (L. Fenimore).

BLUE-WINGED WARBLER: 1 at West Lake, ENP-E 14 Dec (L. Manfredi); 1 at Loxahatchee NWR 29 Dec (B. Hope).

TENNESSEE WARBLER: 1 E of Lake Placid 27 Dec (CBC data).

ORANGE-CROWNED WARBLER: 15 at LARA 13 Jan (H. Robinson).

NASHVILLE WARBLER: 1 at Frog Pond WMA 11 Dec (J. Boyd); 1 at New Port Richey 31 Dec (K. and S. Tracey); 1 of the W subspecies at Lake Jackson 1 Jan (J. Cavanagh).

NORTHERN PARULA: 1 presumed migrant at LARA 10 Feb (H. Robinson).

CHESTNUT-SIDED WARBLER: 1 female at Royal Palm, ENP-E 5-6 Jan (J. Boyd et al.); 1 at Birch SP 12 Jan-EOS (W. George, J. Boyd et al.).

MAGNOLIA WARBLER: 1 at Crews Lake CP (*Pasco*) 18 Dec (M. Gardler, J. Gaetzi).

BLACK-THROATED GREEN WARBLER: 1 male at Bartow 15 Dec (P. Fellers); 1 at Newnans Lake 16 Dec (A. Kratter); 1 at Alva 21 Jan (C. Ewell [photo to FOC], A. Salcedo).

PRAIRIE WARBLER: 1 adult male wintered at Jacksonville (P. Powell), with 2 others there 29 Dec (*fide* P. Powell).

AMERICAN REDSTART: 1 female at Newnans Lake 16 Dec (A. Kratter); 1 female at Paynes Prairie 16 Dec (K. Scott); 1 E of Lake Placid 27 Dec (R. Webb, D. Goodwin, E. Haney).

WORM-EATING WARBLER: 1 at Jacksonville 29 Dec (T. Allen); singles at Birch SP 12 Jan (B. Hope) and 26 Jan (M. Berney, W. George et al.); 1 W of Boca Raton (*Palm Beach*) 3 Feb (B. Hope).

NORTHERN WATERTHRUSH: 1 at Newnans Lake 16 Dec (A. Kratter); at least 4 wintered at LARA (H. Robinson).

LOUISIANA WATERTHRUSH: 1 at West Palm Beach (*Palm Beach*) 5 Jan (CBC data); 1 at Corkscrew Swamp Sanctuary (*Collier*) 12 Jan (J. Boyd et al.); 1 presumed migrant at LARA 10 Feb (H. Robinson).

WILSON'S WARBLER: 1 male at Lakes Park, Fort Myers (*Lee*) 12 Dec-EOS (L. Atherton et al.); 1 at Gainesville 16 Dec (L. Davis); 1 E of Lake Placid 27 Dec (CBC data); 1 near Loxahatchee NWR 30 Dec (B. Hope); males at different Tallahassee sites 1, 5, and 22 Jan (J. Cox, L. Thompson, R. Lengacher, G. Menk); 1 at Emeralda Marsh 26 Jan (J. Puschock); 1 at LARA 27 Jan (H. Robinson); 2 wintered at Frog Pond WMA (*fide* J. Boyd).

YELLOW-BREASTED CHAT: 1 at Paynes Prairie 16 Dec (D. Morrow); 1 at Lake Jackson 1 Jan (E. Hawkins, G. Farr); 1 at Emeralda Marsh 19 Jan (J. Puschock); 1 at Newnans Lake 22 Feb (J. Hintermister); 1 wintered at Frog Pond WMA (*fide* J. Boyd).

SUMMER TANAGER: 1 at Frog Pond WMA 1-2 Dec (L. Manfredi, P. Bithorn); 1 female at Saddle Creek CP (*Polk*) 15 Dec (CBC data); 1 female at Collier-Seminole SP (*Collier*)

9-10 Feb (T. Doyle [photos to FOC], D. Suitor); 1 at Gainesville 19 Feb (M. Meisenburg, B. Simons).

Western Tanager: 1 at Frog Pond WMA 22-27 Dec (P. Bithorn et. al.); 1 female at Cedar Key 28 Dec (D. Henderson).

Western Spindalis: 1 black-backed male at Bill Baggs/Cape Florida SP (*Miami-Dade*) 9 Dec (R. Diaz).

Chipping Sparrow: 1 partial albino at Tallahassee 15 Dec (D. and K. MacVicar).

Clay-colored Sparrow: 19 between Auburndale and Lake Wales (*Polk*) 27 Jan (P. Timmer).

Vesper Sparrow: 4 at Brooker Creek Preserve 22 Dec (A. and R. Smith).

Lark Sparrow: 7 at Redland (*Miami-Dade*) 5 Jan-EOS (J. Boyd et al.); 1 in *Collier* 15 Jan (R. Burk).

Grasshopper Sparrow: 7 at Withlacoochee River CP 4 Jan (R. Smith, B. Ahern).

Henslow's Sparrow: 1 at Green Swamp Wilderness Preserve (*Pasco*) 8 Dec (R. Smith, B. Hoffman); 1 at Jacksonville 29 Dec (R. Rowan).

Saltmarsh Sharp-tailed Sparrow: 30+ at Stokes Nature Preserve (*St. Johns*) 15 Dec (J. Holstein et al.); 1 at Caladesi Island SP (*Pinellas*) 4 Feb (E. Kwater, details to FOC); 1 at Navarre Flats (*Santa Rosa*) 25 Jan (B., L., and W. Duncan, A. Kratter, details to FOC) was the first report for the W Panhandle.

Nelson's Sharp-tailed Sparrow: 30+ at Stokes Nature Preserve 15 Dec (J. Holstein et al.); 1 at Coastal Prairie Trail, ENP-W 3 Dec (B. Roberts); 10 at Fort Island Gulf Beach 14 Jan (M. Gardler, J. Gaetzi).

Seaside Sparrow: 30+ at Stokes Nature Preserve 15 Dec (J. Holstein et al.).

Fox Sparrow: 1 at O'Leno SP (*Columbia*) 12 Jan (J. Hintermister); 1 at Paynes Prairie 27 Jan (M. Manetz, A. Kent).

Lincoln's Sparrow: 1 at Paynes Prairie 1 Feb (J. Hintermister); 1 wintered at Frog Pond WMA (*fide* J. Boyd).

White-throated Sparrow: 5 at Lake Wales 24 Jan (P. Fellers); 1 white-striped morph at Ocala National Forest (*Marion*) 26 Jan (E. Kwater).

White-crowned Sparrow: 3 near Withlacoochee River CP 4 Jan (R. Smith, B. Ahern); 3 at Paynes Prairie 1 Feb (J. Hintermister); 1 immature at Frog Pond WMA 7 Feb (J. Boyd); 1 near Loxahatchee NWR 30 Dec (B. Hope); 1 immature at W Kendall 9 Dec (J. Boyd).

Dark-eyed Junco: 5 at Tall Timbers Research Station (*Leon*) 13 Dec (G. Menk); 1 female at Brandon (*Hillsborough*) 15 Dec-5 Mar (E. Kwater).

*Lapland Longspur: up to 3 at Huguenot Park 8 Dec-4 Jan (B. Richter [photos to FOC], M. Korosy et al.).

Northern Cardinal: 183 at LARA 24 Feb (H. Robinson).

Rose-breasted Grosbeak: 1 female at Merritt Island 5 Jan (J. Hafizi, photo to FOC); 1 female at Collier-Seminole SP 5 Jan-10 Feb (K. O'Reilly-Doyle, L. Douglas, T. Doyle, photos to FOC and note in prep. to *Florida Field Naturalist*).

Black-headed Grosbeak: 1 immature male at Gulf Breeze 4 Jan (B., L., and W. Duncan, details to FOC).

Blue Grosbeak: 1 female in S *Hillsborough* 16 Dec (CBC data); 1 female near Lake Tohopekaliga (*Osceola*) 5 Jan (CBC data); 1 female at Eastpoint 25 Feb (S. Klink); up to 6 (16 Jan) wintered at LARA (H. Robinson).

*Lazuli Bunting: 1 male at LARA 7 Jan (H. Robinson).

Indigo Bunting: up to 24 in a flock at Alva 5 Dec-EOS (L. and L. White et al.); 1 male at Alligator Point 10 Feb (J. Murphy); 1 at New Port Richey 23 Feb (K. and L. Tracey); up to 15 (13 Dec) wintered at LARA (H. Robinson).

Painted Bunting: up to 2 males at Dade City 4-12 Jan (*fide* K. Tracey); females in N *St. Johns* 13 Jan and at Jacksonville 28 Jan-EOS (both P. Powell); 1 male at New Port Richey 9 Feb-EOS (R. Smart et al.); 1 male wintered at Tallahassee for the third year

(B. Buford); 6 wintered at Haines City (*Polk*; A. and H. Wheaton); 10 wintered E of Sanford, with some remaining to late Apr (*fide* R. Grimshaw).

DICKCISSEL: 1 at LARA 16 Dec (H. Robinson); 1 at W Kendall 3 Feb-EOS (L. Snyder, J. Boyd et al.).

EASTERN MEADOWLARK: 62 at LARA 24 Jan (H. Robinson).

YELLOW-HEADED BLACKBIRD: 1 at LARA 10 Feb (H. Robinson).

RUSTY BLACKBIRD: 5 in N *Leon* 6 Dec (R. West, G. Menk).

BREWER'S BLACKBIRD: 1 at LARA 19 Dec (H. Robinson).

BOAT-TAILED GRACKLE: 1 partial albino at St. Marks NWR 12 Jan (J. Holstein et al.).

SHINY COWBIRD: at least 2 at Eagle Lakes Park (*Collier*) 19 Jan (D. Suitor et al.); 12 at Kissimmee Prairie Preserve SP (*Okeechobee*) 4 Feb (P. Small, details to FOC) furnished the highest inland report by far.

BRONZED COWBIRD: 1 female and 1 male at Apalachicola (*Franklin*) 6 Dec (G. Beaton, photos to FOC); 1 adult male at Pensacola Beach 10-15 Dec (B. Duncan et al.); 1 at Fort Walton Beach 17 Dec (W. Duncan, L. Dougherty); at least 12 at Eagle Lakes Park (*Collier*) 19 Jan (J. Boyd et al., photo to FOC by D. Suitor); at least 5 wintered at Lakeland (B. Ahern et al.).

ORCHARD ORIOLE: 1 female at New Port Richey 22 Dec (K. Tracey, photos to FOC); 1 at LARA 24 Feb (H. Robinson).

BALTIMORE ORIOLE: 1 at St. Augustine 21 Dec (J. Holstein); 2 at New Port Richey 31 Dec (K. Tracey); 6 at Lake Region Village (*Polk*) 1 Jan (B. and L. Cooper); 2 at Dade City 6 Jan (K. and L. Tracey).

*BULLOCK'S ORIOLE: 1 immature male at Captiva Island 29 Dec (V. McGrath, details to FOC).

NUTMEG MANNIKIN: 1 at W Pensacola 1 Dec (B. Lucas).

LONCHURA SPECIES: 1 immature at Eco Pond, ENP-W 29 Jan-3 Feb (*fide* J. Boyd, photos to FOC by B. Putnam and L. Snyder) was considered by R. Restall (author of *Munias and Mannikins*, Yale University Press, 1997) as either a Tricolored Munia or a Chestnut Munia, although the identification was based at least partially on the presumption that the bird had dispersed from Cuba or elsewhere in the West Indies. However, the munia perhaps more likely was an escapee.

PURPLE FINCH: 4 at Alachua 10-13 Jan (B. Wallace) and another elsewhere at Alachua 17 Feb (B. Quinn).

HOUSE FINCH: 1 in E *Polk* 5 Dec (F. and R. Clark); up to 14 at Lake Wales 29 Dec ff (*fide* B. and L. Cooper et al.); 1 male at Land O' Lakes (*Pasco*) 3-4 Jan (S. Burns, photo to FOC); 2 at Tampa 5 Jan (D. Powell); 2 at New Port Richey 19 Feb (J. McKay, K. and L. Tracey, photo to FOC).

PINE SISKIN: 1 in *Wakulla* 3 Dec (J. Epler); 1 at Alva 7 Dec-EOS (L. and L. White et al.); 1 at Corkscrew Swamp Sanctuary 18 Jan (R. Brewer, photo to FOC); at least 4 at Homosassa Springs Wildlife SP (*Citrus*) 22 Jan (M. Wilkinson, J. Alexander); 1 at Wakulla Springs SP 25 Jan (N. Sekera).

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Addition to the Spring 2001 report: Sacred Ibis: 4 at the *Miami-Dade* landfill 23 Mar (John Boyd et al.) was only the second published report for Florida.

Correction to the Spring 2001 report: the location for the Wild Turkey in *Pinellas* should be Boca Ciega Park, not Walsingham Park. We thank Judy Fisher for correcting this error.

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Abstract.—We have studied the exotic parrot fauna of Broward County, Florida since July 1999. During this period, 31 species of parrots were observed, with 20 of these not previously known to occur in the county. Twenty-four species (77%) were documented by still or video photographs. Three species are newly reported for Florida but only one of these was photographed. Breeding of 14 species was confirmed during our study. We summarize the population status, distribution, and verifiable evidence of occurrence for all parrots that have been reported in Broward County, including seven species observed prior to, but not during, our study. Populations of Red-crowned Parrots in Broward County may be suitable for reintroduction programs into Mexico, should such an effort be undertaken. Increased monitoring of parrots and other exotic birds in Florida is encouraged.

Broward County is situated along the Atlantic Ocean in southeast Florida, bordered by Palm Beach County to the north, Miami-Dade County to the south, and Collier and Hendry counties to the west. Historically, most of the county consisted of Everglades marshes, sloughs, and tree islands. Upland habitats, e.g., slash pine (*Pinus elliottii*) rocklands, xeric oak scrub, and tropical hammocks, grew on a narrow ridge (the Atlantic Coastal Ridge) just inland from the ocean (Owre 1973, Cox 1987, Myers and Ewel 1990). The occurrence of baldcypress (*Taxodium distichum*) swamps on the Atlantic Coastal Ridge was not mentioned by Ewel (1990), but many of these forests still occur.

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The human population of Broward County has grown enormously since the early 1900s. From just over 5000 residents in 1920, the population increased to nearly 40,000 by 1940, nearly 85,000 by 1950, 325,000 by 1960, and nearly 620,000 by 1970. The population surpassed one million residents by 1980, reached 1.25 million by 1990 (Broward County website: <http://www.co.broward.fl.us>), and exceeded 1.6 million by 2000 (U.S. census website: <http://factfinder.census.gov>). This massive human immigration has resulted in destruction of most uplands and many wetlands in Broward County. Native habitats on the Atlantic Coastal Ridge have been replaced by a continuous expanse of development for nearly its entire 180-km length (Owre 1973). Subsequent landscaping has used predominantly exotic vegetation from throughout the tropics and sub-tropics. In the past 20 years, municipal and county governments in Broward County have permitted development of most of the historic Everglades lying east of U.S. Highway 27, and these areas too have been revegetated extensively with exotics. By 1996, 34% of Broward County had been developed or was planned for development, while the remainder consists of Water Conservation Areas and Indian reservations west of U.S. Highway 27 (Broward County website).

The introduction of exotic parrots into Broward County for perhaps the past 50 years (Flor 1989b) has been haphazard and probably largely unintentional. There probably have been hundreds of separate releases of birds from pet owners, aviculturists, animal exhibitors, and others. Stories abound to explain the presence of free-flying parrots in southeast Florida, and some of these have been published (e.g., Flor 1989a, b; Nolin 1997). In contrast to such "popular mythology," the ornithological record of parrots in Broward County was quite sparse and greatly incomplete before we initiated our study—and even this study is mostly limited to the Fort Lauderdale metropolitan area. Here, we provide information on general distribution, population sizes, breeding status, and verifiable evidence of parrots in Broward County.

Methods

We use the term "parrot" to describe all species of psittacids. Because Florida's only native parrot, the Carolina Parakeet (*Conuropsis carolinensis*), is long extinct, it should be understood that all the species we discuss are exotics. Epps has consistently recorded observations since 1997; one observation herein dates to 1989. Her data were obtained from nearly daily, incidental observations rather than from formal, standardized surveys. We include observations from aviculturists or parrot owners whose identification skills we trust; some of these individuals asked to remain anonymous. Unless specified, all observations are our own. We searched for parrot observations in *Florida Field Naturalist* and *Audubon Field Notes* and its successors through *North American Birds*, assisted through 1989 by Loftin et al. (1991). The Fort Lauderdale Christmas Bird Count is the only CBC conducted in Broward County, and parrots were first reported in De-

cember 1973. Because few species were found prior to December 2000, we cite these 27 CBCs as Bolte (1974-1989) and George (1990-2000). Data from the December 2000 and December 2001 CBCs, obtained from George (2001, 2002) and personal observations of Epps, are found in Table 1. We examined the data cards of the Florida Breeding Bird Atlas Project, 1986-1991 (Kale et al. 1992) and contacted some participants for additional information.

Table 1. Parrot data from the 17 December 2000 and 16 December 2001 Fort Lauderdale Christmas Bird Counts, taken from George (2001, 2002) and personal observations of Epps. Species marked with an asterisk (*) were observed on the 2000 CBC but were not published in *American Birds* due to problems with online data entry (G. LeBaron pers. comm.). The abbreviation "cw" refers to an observation during count-week but not on count day.

SPECIES	2000	2001
Chestnut-fronted Macaw	29	28
Blue-crowned Parakeet	32	78
Green Parakeet	6*	1
Mitred Parakeet	50	48
Red-masked Parakeet	53	36
White-eyed Parakeet	4*	1
Black-hooded Parakeet	6	13
Monk Parakeet	78	246
White-winged Parakeet	30*	180
Yellow-chevroned Parakeet	2	10
White-fronted Parrot	cw*	cw
Red-crowned Parrot	177	16
Lilac-crowned Parrot	1*	1
Blue-fronted Parrot	0	10
Yellow-headed Parrot	4	0
Yellow-naped Parrot	2*	4
Orange-winged Parrot	cw	22
Mealy Parrot	0	cw
Total species	16	17
Total individuals	524	694

For those parrots that are not included in the AOU *Check-list* and its supplements (AOU 1998, 2000, 2002), we use Sibley and Monroe (1990) for taxonomy, and Clements (2000) for nomenclature. To reduce confusion, we include alternate English names used by various authorities, except those that substitute conure for parakeet and amazon for parrot. Parrots were identified to subspecies when possible using Juniper and Parr (1998). We include at least one photograph for every species verified in Broward County, and we emphasize evidence that documents breeding. In a few instances, we photographed parrots after they were captured and returned to captivity. Verifiable evidence is included on CD-ROMs that have been deposited in the Florida Ornithological Society Archives at the Florida Museum of Natural History in Gainesville (FOSA 125). Previously unarchived images or videos on this CD-ROM have been given BPCD (Broward Parrot CD) catalog numbers. Copies of the CD-ROM are available from Pranty upon request.

We divided the Fort Lauderdale metropolitan area into several regions for precision. These are identified by roads or water bodies that form their north, east, south, and west boundaries, respectively.

- Coral Ridge: Oakland Park Boulevard, the Intracoastal Waterway, Sunrise Boulevard, and U.S. Highway 1.
- Downtown: Sunrise Boulevard, U.S. Highway 1, New River, and NW 7th Avenue.
- Golden Heights: NE 19th Street, Interstate 95, Sunrise Boulevard, and NW 31st Avenue.
- Harbor Beach: New River, Atlantic Ocean, Port Everglades, and the Intracoastal Waterway.
- Hugh Taylor Birch State Park: NE 19th Street, State Road A1A, Sunrise Boulevard, and the Intracoastal Waterway.
- Las Olas Isles: NE 6th Street, the Intracoastal Waterway, New River, and Victoria Park Road.
- Poinsettia Heights: Middle River, U.S. Highway 1, NE 13th Street, and NW 15th Avenue.
- Rio Vista: New River, the Intracoastal Waterway, State Road A1A, and U.S. Highway 1.
- The roost: the southwest corner of U.S. Highway 1 and NE 13th Street.
- Victoria Park: Sunrise Boulevard, Victoria Park Road, Broward Boulevard, and U.S. Highway 1.

Results

We account for 38 species of parrots that have been identified in Broward County since the 1970s. Thirty-one species have been seen since 1999, and 20 (52%) of these were not previously known to occur in the county. We obtained photographic evidence for 24 species, including one parrot genus (*Cacatua*) and nine species known to occur in Florida but not previously verified: Gray Parrot, Red-breasted Parakeet, White-eyed Parakeet, Chestnut-fronted Macaw, White-fronted Parrot, Blue-fronted Parrot, Mealy Parrot, Yellow-naped Parrot, and Orange-winged Parrot (scientific names to follow). We also photographed one species (Red-throated Parakeet) not previously reported in Florida, and discuss two other newly-observed but unverified species (Red-and-green Macaw and Sun Parakeet or Jandaya Parakeet). The 15 species marked in the following accounts with an asterisk (*) are breeding currently (14 species) or reportedly bred previously (Budgerigar). Because parrots in Broward County cannot be divided as "neatly" as Garrett (1997) found for those in southern California, we include all species in a single list.

Species Accounts

Tanimbar Cockatoo (*Cacatua goffini*): Endemic to Tanimbar and associated islands in Indonesia; considered near-threatened (Juniper and Parr 1998). There are few Florida reports. One individual with a tethering ring attached to one leg, seen at Heritage Park, Plantation

17-20 June 1999, reportedly had been present for some time. Pranty (2000a) mis-stated that the bird was "banded" and was first seen 16 June. Two photographs (BPCD 01a-b, 20 June 1999, S. Epps) clearly show a *Cacatua* but the images cannot be identified specifically. This is the Goffin's Cockatoo of Forshaw (1977) and Pranty (2000a), and the Tanimbar Corella of del Hoyo et al. (1997).

Cockatiel (*Nymphicus hollandicus*): This widespread Australian parrot is common in captivity. Escapees are seen often in Florida but do not survive long. There are seven observations in Broward County, all singles. Birds were seen at the Fort Lauderdale roost 15 March 1998 and afterward, Hollywood 8 February 2001 (L. and T. Cumiskey pers. comm.), Oakland Park 9 March-8 July 2002, and Wilton Manors 28 August 1999. Other Cockatiels were captured at the Dania Pier 21 July 2001 (D. Laird; BPCD 02, photographed in July 2001, S. Epps), Broward Community College, Davie 30 May 2001 (P. LeRoy pers. comm.), and John U. Lloyd State Park, Hollywood ca. July 1998 (C. and D. Zeletes; BPCD 03, photographed in October 2001, S. Epps).

*Budgerigar (*Melopsittacus undulatus*): This Australian native probably is the most popular cagebird in the world. Escapees are frequent but do not seem to survive long. A population that formerly numbered in the thousands of individuals has been established along the central Gulf coast of Florida since the 1960s, but populations along the Atlantic coast were small and ephemeral (Pranty 2001b). Based on information provided by others, Shapiro (1979, 1980) and Wenner and Hirth (1984) referred to Budgerigars as common or abundant breeding residents at Fort Lauderdale, but these assessments were questioned by Pranty (2001b). Budgerigars were found on 10 Fort Lauderdale CBCs between 1973 and 1988, with the largest count of 11 individuals in December 1977. They were not noted in Broward County during the Atlas project (Kale et al. 1992), and only single individuals have been reported since 1990 (Pranty 2001b). Nearly all Budgerigars observed recently have been avicultural color morphs. Singles were at Dania 30 September 2001 (blue morph; BPCD 04, S. Epps); Oakland Park 14 March, 23 April, 31 August, and 6 November 2001 (two different blue morphs; BPCD 05, S. Epps; M. Garcia pers. comm.), 9 December 2001 (green morph), and 30 August 2002 (yellow and green morph; BPCD 06, S. Epps), and Pembroke Pines in late 1998 (blue morph; K. and K. Schnitzius in litt.) and 6 October 2001 and afterward (yellow morph; K. and K. Schnitzius in litt.; D. La Puma in litt.).

Gray Parrot (*Psittacus erithacus*): This central African parrot is well-known in captivity but rarely is observed in the wild in Florida. Three have been seen in Broward County in recent years, all at Hollywood. Escapees were recaptured ca. 1994 (D. and S. Clark pers. comm.) and in July 2000 (L. Cumiskey; BPCD 07, photographed 3 February

2001, S. Epps), while another was seen 7 January 2001 (W. Piedra pers. comm.). The individual photographed is *P. e. erithacus*, based upon its dark bill, pale gray plumage, and scarlet tail.

Peach-faced Lovebird (*Agapornis roseicollis*): This common cagebird from southwest Africa has established a breeding population at Phoenix, Arizona (AOU 2002). Birds are seen infrequently outside of captivity in Florida. Three singles have been observed in Broward County: at Hollywood in July 2000 (L. and T. Cumiskey pers. comm.), Oakland Park 7 May 2001 (M. Garcia pers. comm.), and Victoria Park in August 2001 (L. Gardella pers. comm.). This is the Rosy-faced Lovebird of Sibley and Monroe (1990), Clements (2000), and Pranty and Garrett (2002).

Rose-ringed Parakeet (*Psittacula krameri*): This most widely distributed parrot in the Old World is found from central Africa to south Asia. Free-flying populations have been known in Florida since at least the 1950s (Robertson and Woolfenden 1992). There are four Broward County reports: singles on Fort Lauderdale CBCs in December 1986 and December 1987, and Atlas reports of one at Boca Raton 2 July 1986 (W. Biggs) and a pair at Fort Lauderdale 14 April 1991 (J. Baker). This is the Ring-necked Parakeet of Juniper and Parr (1998).

Plum-headed Parakeet (*Psittacula cyanocephala*): This Asian parrot has been reported in the wild in Florida only a few times. Robertson and Woolfenden (1992) listed it without annotation as having occurred in Broward County.

Red-breasted Parakeet (*Psittacula alexandri*): Native from India to southeast Indochina, with only two reports for Florida (Pranty 2001a). Presumably the same individual was observed among *Aratinga* flocks at Rio Vista 17 June 2001 (BPCD 08a-c, S. Epps), Los Olas Isles (ca. 2 km away) 5 October 2001 and 21 January 2002, and "Sailboat Bend," Fort Lauderdale 6 June 2002 (BPCD 08d, S. Epps). This is the Moustached Parakeet of Forshaw (1977).

*Monk Parakeet (*Myiopsitta monachus*): This abundant native of southern South America is widespread and locally common in Florida. In Broward County, it seems to outnumber all other parrots combined. It occurs throughout all developed areas, with one nesting site (Everglades Holiday RV Park) located west of U.S. Highway 27. From localized surveys from 1999 to 2001, Pranty (unpublished data) estimated the population in Broward County at a minimum of 1200 individuals, and mapped 363 nests. By early 2002, Epps (2002) knew of 400 nests and estimated at least 2000 individuals in the county. Monk Parakeets were first reported in Broward County during the 1973-1974 Fort Lauderdale CBC, and were reported on all subsequent CBCs except during 1976-1977 (Bolte 1974-1989, George 1990-2000, Table 1). Between the 1973-1974 and 1987-1988 count periods, a mean of 4 individuals (range

0-9) was found, but numbers on subsequent CBCs increased greatly. Since the 1988-1989 count period, a mean of 106 individuals (range 34-246) has been reported (Bolte 1974-1989, George 1990-2000, Table 1). Verifiable evidence is abundant, e.g., 2 adults in a nest photographed at Pompano Beach 24 July 1999 (BPCD 09, B. Pranty), 2 at Pembroke Pines in 1999 (BPCD 10, Kevin Schnitzius), and 7 at a nest at Lauderhill 12 November 2001 (BPCD 11, B. Pranty). Crews from Florida Power and Light Company knocked down several nests at Cooper City 10 April 2000, destroying about 30 eggs (BPCD 12, Diaz 2000; BPCD 13, Guilarte 2000). Nestlings were present in several nests in the Fort Lauderdale area 24 July 1999. Between 1968 and 1972, a total of 64,225 Monk Parakeets was imported into the United States (Banks 1977 in Long 1981). The national population is increasing exponentially (Van Bael and Pruett-Jones 1996), with the largest numbers found in Florida and Connecticut (Pranty 2002a). Populations in Broward County have increased noticeably since 1999 at Pembroke Pines (Kim Schnitzius in litt.) and Lauderhill.

*Blue-crowned Parakeet (*Aratinga acuticaudata*): Native to three widely separate regions of South America. Populations in the south half of the Peninsula and the Keys appear to be increasing. In Broward County, it is rather widespread since first observed in February 1999. It is fairly common at Fort Lauderdale (Coral Ridge, Harbor Beach, Los Olas Isles, Oakland Park, the roost, and Victoria Park), with 12 at Pompano Beach 14 November 2000, 6 at Topeekeegee Yugnee Park, Hollywood 6 February 2001 (P. Baicich in litt.), 2 at Lauderhill 16 March 2001, and 4 or more at Wilton Manors in 2001. The largest counts are 78 on the CBC 16 December 2001, and 60 at Rio Vista 12 November 2001. Flocks were photographed at Los Olas Isles 21 January 2001 (BPCD 14a-b, B. Pranty; 6 individuals), Wilton Manors 25 February 2001 (BPCD 15, S. Siegel; 2 individuals), and Fort Lauderdale 25 March 2002 (BPCD 16, D. Humeston; two individuals). Six nests were found in 2001: one at Lauderhill, three at Oakland Park, and two at Wilton Manors. These were all used again in 2002, and others were found: a fourth nest at Oakland Park and at least 10 nests at Rio Vista. The extensive blue on the heads of the Broward County individuals indicate they are of the nominate subspecies. Blue-crowned Parakeets have been exported in large numbers for the pet trade, with 94,000 imported from Argentina from 1985 to 1990 (Juniper and Parr 1998).

Green Parakeet (*Aratinga holochlora*): Endemic to Mexico (Howell and Webb 1995, del Hoyo et al. 1997, Clements 2000); birds in south Texas are "probably" escapees or their descendants (AOU 1998). Green Parakeets are rarely reported outside of captivity in Florida, although the first observations were from Palm Beach County in the 1920s (Barbour 1925). Since 1999, they have been observed in small numbers at

Fort Lauderdale (Los Olas Isles and Victoria Park), with the largest count of 10 at Rio Vista 25 January 2002. Breeding has not yet been confirmed. Individuals were photographed at Victoria Park 21 January 2001 (BPCD 17, B. Pranty) and in February 2001 (BPCD 18, S. Epps).

Red-throated Parakeet (*Aratinga rubritorquis*): Native from Guatemala to Nicaragua. It formerly was considered a subspecies of *A. holochlora* but was elevated to species status by Howell and Webb (1995), del Hoyo et al. (1997), and Clements (2000). One was photographed at Los Olas Isles in early 2001 (BPCD 19, S. Epps).

Crimson-fronted Parakeet (*Aratinga finschi*): Native from Nicaragua to Panama. Known previously in Florida solely from Miami-Dade County. Duos were seen at Victoria Park 2-3 June 2001, and Fort Lauderdale 8 September 2002. This is the Finsch's Conure of Forshaw (1977) and Juniper and Parr (1998).

*Mitred Parakeet (*Aratinga mitrata*): Native from southern Peru to northwest Argentina. Populations seem to be increasing in Florida, and are established in southern California (AOU 2002). In Broward County, 45 birds were reported on the 1992 Fort Lauderdale CBC, but there were no further observations until 1999. Presently, it is fairly common at Fort Lauderdale (Los Olas Isles, Rio Vista, and Victoria Park) with one at Hollywood 18 June 2001 and a few seen at Wilton Manors 4 February 2001. The largest count is 65 at Rio Vista 12 November 2001. Nests were located at Las Olas Isles in 2000 (BPCD 20-21, 13 February 2000, G. Heim; Fig. A in Pranty and Garrett 2002) and in 2001, and at Rio Vista in 2001 and 2002 (four). Based on the large amount of red on the head, the Mitred Parakeets in Broward County represent the nominate subspecies. This species has been captured in huge numbers for the pet trade. Bolivia exported 35,100 from 1981 to 1984, and at least 108,033 birds were taken from Argentina from 1985 to 1990. Such a level of export is a "serious threat" to that population (del Hoyo et al. 1997).

*Red-masked Parakeet (*Aratinga erythrogenys*): Endemic to Ecuador and Peru, and considered near-threatened (Juniper and Parr 1998). Populations seem to be increasing in Florida. Observed first in Broward County in 1999, and fairly common at Fort Lauderdale (Coral Ridge, Los Olas Isles, Rio Vista, and Victoria Park), with 8 at Hollywood 3 June 2001, one at Pompano Beach 14 November 2000, and 16 at Wilton Manors 30 June 2001. The largest count is 53 at Los Olas Isles on the CBC 17 December 2000. Adults fed 2 juveniles at Coral Ridge 15 July 1999, and 6 juveniles were among 30 adults at Los Olas Isles 8 December 2001. Five nests were discovered in 2001: Hollywood 3 June 2001 (BPCD 22, S. Epps), Victoria Park, and Wilton Manors (three). At least 16 nests were found in 2002: ten at Rio Vista, three at Wilton Manors, and three at Fort Lauderdale (BPCD 23-25, D. Humeston).

Red-masked Parakeets have been captured in large numbers for the pet trade, with 26,375 individuals exported from 1985 to 1990 (del Hoyo et al. 1997).

*White-eyed Parakeet (*Aratinga leucophthalmus*): Widespread in northern and central South America, but reported rarely in the wild in Florida. Seen regularly at Fort Lauderdale (Los Olas Isles and Victoria Park) since January 2000, with one at Hollywood 18 June 2001. The largest counts are 25 at Victoria Park 7 February 2001, and 15 (including several copulating pairs) at Los Olas Isles 6 February 2001. Breeding was confirmed at Victoria Park when an adult fed a juvenile 2 June 2001. Individuals were photographed at Victoria Park 21 January 2001 (BPCD 26, B. Pranty) and in February 2001 (BPCD 27, S. Epps). Large numbers of White-eyed Parakeets have been exported in recent years; 31,169 birds were taken from Argentina from 1985 to 1990. Capture for the pet trade is considered a serious threat to some populations (del Hoyo et al. 1997).

Sun Parakeet (*Aratinga solstitialis*) or Jandaya Parakeet (*Aratinga jandaya*): Native to a small area of northeastern South America (Sun Parakeet), or endemic to northeast Brazil (Jandaya Parakeet). Two seen often in flight over Wilton Manors in 2000 (anonymous pers. comm.; identified specifically as Sun Parakeets) represented one of these two similarly-plumaged parrots. Both species are available locally in pet shops, with the Sun Parakeet being more common.

Orange-fronted Parakeet (*Aratinga canicularis*): Native to the Pacific slope of Central America from Mexico to Costa Rica. Since 1988, there has been only one Florida observation outside of captivity (Stevenson and Anderson 1994, Pranty 2002b). In Broward County, it is known from seven Fort Lauderdale CBCs between the 1974-1975 and 1985-1986 count periods, with the largest count of 4 individuals in December 1984.

*Black-hooded Parakeet (*Nandayus nenday*): Native from southwest Brazil to northern Argentina. Populations in Florida are widespread, locally common, and increasing (Pranty 2002a, Pranty and Lovell unpublished data). In Broward County, the Black-hooded Parakeet is common at Pompano Beach, and present less commonly throughout most urban and suburban areas. It was reported first as 3 individuals each on the 1985 and 1986 CBCs, and from Atlas reports of pairs at Pompano Beach 15 April 1989 (V. McKinney) and south of Deerfield Beach in 1990 (W. Biggs). Birds were not reported again until the 1998 Fort Lauderdale CBC. Largest counts are 87 at Pompano Beach 14 November 2000 (BPCD 28, S. Epps; ca. 31 individuals), 30 at Coconut Creek 6 September 2001 (P. Bodnick in litt.), 8 at Davie 6 September 2001 (anonymous pers. comm.), 9 at Fort Lauderdale (Coral Ridge, Los Olas Isles, and Victoria Park), 1 at Hollywood 7 January

2001, 2 at Oakland Park 13 July 2002, 6 at Pembroke Pines 10 January 2000, and 29 at Wilton Manors 5 February 2002. Two birds were observed copulating at Los Olas Isles 9 April 2001 (BPCD 29, S. Epps), and a pair was photographed at their nest at Davie 19 April 2002 (BPCD 30, D. Humeston). A snag contained an occupied cavity at Wilton Manors 11 February-30 May 2001 until it was cut down. Two juveniles were fed by adults at Coral Ridge 11 June 2001 (G. Cashin pers. comm.). During the 1980s, Black-hooded Parakeets were one of the most common parrots captured for the pet trade, with over 114,000 exported from 1985 to 1990 (Juniper and Parr 1998). This is the Nanday Conure of Forshaw (1977), and the Nanday Parakeet of Sibley and Monroe (1990), del Hoyo et al. (1997), and Clements (2000).

*Chestnut-fronted Macaw (*Ara severa*): Native from Panama to central South America. Rare to uncommon in the wild in Florida, and previously known to be breeding in only Miami-Dade County. The previous report from Broward County was from an undated checklist for Birch State Park (Stevenson and Anderson 1994). Presently, it is uncommon at Fort Lauderdale (Birch State Park, Los Olas Isles, and Victoria Park) and rare at Dania and Wilton Manors. The largest counts are 29 at Los Olas Isles on the CBC 17 December 2000 (Table 1), and 11 or more at Victoria Park 21 January 2001 (BPCD 31a-b, B. Pranty). Nests were found at Dania in 2001 and 2002, Victoria Park in 1999, and Wilton Manors (two) in 2001 (BPCD 32a-f, 25 February 2001, S. Siegel). Two begging juveniles accompanied 2 adults at Victoria Park 2 June 2001, and an injured fledgling was captured at Fort Lauderdale 28 August 2002 (B. Henry, BPCD 33; S. Epps).

Red-and-green Macaw (*Ara chloropterus*): Native from Panama through most of central South America. In spring 2001, one made at least three visits to a yard at Oakland Park where there was a captive individual of this species (B. Swanson pers. comm.). This is the Green-winged Macaw of Forshaw (1977) and Juniper and Parr (1998).

Scarlet Macaw (*Ara macao*): Native to three disjunct areas from southern Mexico to central South America; reported rarely outside of captivity in Florida. One was seen at Rio Vista 5 October 2001 (P. Sielicki pers. comm.). We know of two other recent reports of macaws that probably refer to this species.

Blue-and-yellow Macaw (*Ara ararauna*): Widespread in northern and central South America. There are several Florida reports. Individuals were observed often at Fort Lauderdale in the 1980s, including 3 at Birch State Park in 1989. One was seen at Oakland Park in spring 2001 (B. Swanson pers. comm.).

Golden-collared Macaw (*Propyrrhura auricollis*): Native to central South America. The sole Florida report outside of captivity is from Ripley (1982), who observed 2 near Birch State Park 18 February 1981,

and one in February 1982. This is the Yellow-collared Macaw of Forshaw (1977), Ripley (1982), Sibley and Monroe (1990), Robertson and Woolfenden (1992), Stevenson and Anderson (1994), del Hoyo et al. (1997), and Juniper and Parr (1998).

Orange-chinned Parakeet (*Brotogeris jugularis*): Native from southern Mexico to northern South America. It formerly was observed in southeast Florida, but has not been reported since the 1980s (Stevenson and Anderson 1994). Two were reported on the 1979 Fort Lauderdale CBC. This is the Tovi Parakeet of Juniper and Parr (1998).

The "Canary-winged" Parakeet was previously considered a single species, but the AOU (1997, 1998) elevated two races to species status: White-winged Parakeet (*B. versicolurus*) and Yellow-chevroned Parakeet (*B. chiriri*). "Canary-winged" Parakeets were first reported in Broward County at Fort Lauderdale on 11 September 1970 (George 1971a in Stevenson and Anderson 1994). They were found on nearly every CBC between 1973-1974 and 1993-1994, with a mean of 15 individuals (range 0-75; Bolte 1974-1989, George 1990-2000). They were not reported again until December 1999, when 13 were observed (Table 1). There is one Atlas report of "Canary-winged" Parakeets visiting a potential nest site at Fort Lauderdale 22 May 1989 (J. Baker). Both species were imported into the U.S. during the 1970s and 1980s (Brightsmith 1999). There seems to be no way to determine which "Canary-winged" Parakeet was observed in Broward County prior to 2000, but most if not all individuals presumably were *versicolurus*.

*White-winged Parakeet (*Brotogeris versicolurus*): Native to the Amazon Basin. Juvenile White-winged Parakeets were observed with adults at Los Olas Isles 18 July 2001, and a nest was found at Victoria Park 17 March 2002. The largest counts are from Los Olas Isles: 200 on 7 November 2000 and 180 on the CBC 16 December 2001. Several dozen individuals were videotaped at Los Olas Isles 11 January 2000 (BPCD 34, K. Fay). This is the Canary-winged Parakeet of Sibley and Monroe (1990) and Clements (2000).

*Yellow-chevroned Parakeet (*Brotogeris chiriri*): Widespread in central South America. It was thought to be restricted in Florida to southern Miami-Dade County prior to our study. Since January 2000, small numbers have been observed at Fort Lauderdale (Downtown, Los Olas Isles, and Victoria Park), usually among flocks of White-winged Parakeets. The largest count is 10 at Los Olas Isles on the CBC 16 December 2001. Adults were seen feeding fledglings at Los Olas Isles 18 July 2001 and 28 June 2002. K. Garrett (in litt.) identified by voice several Yellow-chevroned Parakeets among a mixed *Brotogeris* flock videotaped at Victoria Park 11 November 2001 (BPCD 35, B. Pranty).

White-crowned Parrot (*Pionus senilis*): Found along the Caribbean slope of Central America from Mexico to Panama. The sole Florida report is one from Fort Lauderdale 29 April 1984 (Kale 1984). This is the White-capped Parrot of Forshaw (1977).

*White-fronted Parrot (*Amazona albifrons*): Widespread from Mexico to Nicaragua. Reported rarely in the wild in Florida. In Broward County, one was observed at Fort Lauderdale 12 April 1980 (Kale 1980) but there were no further reports until 1999. The largest totals are 8 at the Fort Lauderdale roost 12 December 2000 and 8 (including at least 3 juveniles) at Oakland Park 1 August 2001. A nest was found at Wilton Manors in February 2001 (BPCD 36, S. Epps, adult at cavity entrance, 6 February 2001; BPCD 37a-g, S. Siegel, adults copulating, 25 February 2001), and 2 adults and 3 juveniles were observed there 21 May 2001. Two fledglings were videotaped at Oakland Park 12 November 2001 (BPCD 38, B. Pranty). On the basis of the limited blue patches on the fore-crown, the Broward individuals appear to be the nominate subspecies.

*Red-crowned Parrot (*Amazona viridigenalis*): Endemic to northeast Mexico, where numbers have declined severely in recent decades. Birds in south Texas are "most likely" escapees or their descendants (AOU 1998), while a large and increasing population is established in southern California (Garrett 1997, AOU 2002). Red-crowned Parrots in southeast Florida were first noted in the early 1970s and were "commonly seen" at Fort Lauderdale (Owre 1973). In Broward County, they are locally common and have been present for 30 or more years at Fort Lauderdale (Birch State Park, Coral Ridge, Golden Heights, Harbor Beach, Los Olas Isles, Poinsettia Heights, Rio Vista, the roost, and Victoria Park). Red-crowned Parrots are breeding also at Dania, Lauderhill, Oakland Park, and Wilton Manors. Reported first on the 1974-1975 CBC, they were seen annually except during the 1998-1999 count. Means on CBCs by decades are 43 (range 14-49; 1974-1979), 54 (range 6-77; 1980-1989), and 33 (range 0-100; 1990-1999); 177 and 16 were seen in December 2000 and December 2001, respectively (Bolte 1974-1989, George 1990-2000, Table 1). Paul Sykes (in Stevenson 1975) counted 21 Red-crowned Parrots at the Fort Lauderdale roost 22 February 1975, and we routinely observed over 100 individuals there. The largest counts are 236 on 11 August 2002 and 204 on 4 December 1999. We observed 38 Red-crowned Parrots (including begging juveniles) at a Dania roost 27 August 2001. Breeding in Broward County was confirmed first in May 1974, when J. and W. Bolte photographed adults feeding a juvenile at Fort Lauderdale (TTRS P232). W. Biggs (pers. comm.) removed 3 nestlings from a nest at Wilton Manors in May 1981 (TTRS P524, 8 May 1992; one photographed as an adult). There are Atlas reports of occupied nests at Fort Lauderdale and Port

Everglades in 1989 (J. Baker). Six nests were found in 2001: one at Dania, three at Oakland Park, and two at Wilton Manors. In 2002, one nest was found at Dania and 13 were discovered at Oakland Park. "Lots" of juveniles were among 158 Red-crowned Parrots at the Fort Lauderdale roost 23 October 1999 (Pranty 2000b). Numerous individuals have been verified, e.g., ca. 80 *Amazona*, mostly Red-crowned Parrots, near the Fort Lauderdale roost 21 January 2001 (BPCD 39, B. Pranty), several dozen there 11 November 2001 (BPCD 40, B. Pranty), and 2 adults at Lauderhill 16 March 2001 (BPCD 41, S. Epps; Fig. C in Pranty and Garrett 2002). This is the Green-cheeked Amazon of Forshaw (1977) and Juniper and Parr (1998).

Lilac-crowned Parrot (*Amazona finschi*): Native to the Pacific slope of Mexico, and considered near-threatened (Juniper and Parr 1998). Rare in Florida, with most reports from southeast counties. In Broward County, it was first observed at Fort Lauderdale 22 February 1975 (Stevenson 1975) but was not seen again until 20 January 2000. Seen often during our study at Oakland Park, the Fort Lauderdale roost, and Victoria Park, where one was photographed 16 August 2001 (BPCD 42, S. Epps). Most observations have been of singles, but duos were at the roost 4 October 2001 and 11 August 2002.

Red-lored Parrot (*Amazona autumnalis*): Native from Mexico to northern South America, with a disjunct population along the central Amazon River. There are few Florida reports outside of captivity. Based on its red forehead and yellow cheek patches, one at the Fort Lauderdale roost 23 January 2002 was the nominate subspecies, which ranges from Mexico to Honduras.

*Blue-fronted Parrot (*Amazona aestiva*): Native from southern Brazil to northern Argentina. Small numbers were seen free-flying in Florida in the 1970s and 1980s but not afterward (Stevenson and Anderson 1994). In Broward County, birds have been noted since January 2000 at Dania and Fort Lauderdale (Las Olas Isles, the roost, and Rio Vista). The largest count is 12 (4 adults, 4 sub-adults, and 4 juveniles) at the roost 8 February 2002, with 10 (2 adults, 4 sub-adults, and 4 juveniles) there on the CBC 16 December 2001. Two adults were at a Dania roost 7 January 2001. Two sub-adults were photographed at the Fort Lauderdale roost 21 March 2001 (BPCD 43-44, S. Epps), one sub-adult was videotaped there 11 November 2001 (BPCD 45, B. Pranty), and 2 adults fed 2 juveniles nearby 31 August 2002. A nest was found at Rio Vista in March-April 2002. This is the Turquoise-fronted Parrot of Robertson and Woolfenden (1992) and Stevenson and Anderson (1994).

Mealy Parrot (*Amazona farinosa*): Native from southern Mexico to southeast Brazil; rare in Florida. One was photographed at the Fort Lauderdale roost 24 July 1999 (BPCD 46, B. Pranty) and was seen

there again 2 August 1999. With its blackish bill and no discernable blue on the crown; this individual may have been either *A. f. guatemalae* or *virenticeps*. A different Mealy Parrot was found at Los Olas Isles 15 December 2001.

Yellow-headed Parrot (*Amazona oratrix*): Native to three regions of Central America between Mexico and Honduras. It was formerly common in captivity, and birds were reported frequently in the wild in Florida. In Broward County, individuals have been observed since 22 February 1975 (Stevenson 1975), but breeding has never been confirmed. Observed recently at Fort Lauderdale (Rio Vista and the roost) and Oakland Park. A few were seen annually on Fort Lauderdale CBCs from 1977 to 1987 (mean of 3, range 2-4, $n = 11$), but frequency declined in later years. Beginning in December 1988, Yellow-headed Parrots have been seen on only 6 CBCs (mean of 1, range 0-7, $n = 14$), with the high count in December 1989 (Bolte 1974-1989, George 1990-2000, Table 1). A pair was seen at Fort Lauderdale during the Atlas project in 1987 (W. George). We have never seen more than a single Yellow-headed Parrot at any time; most of the 4 individuals reported on the 2000 CBC may have been misidentified Orange-winged Parrots. Yellow-headed Parrots were photographed at Fort Lauderdale 24 July 1999 (BPCD 47, B. Pranty) and 5 January 2001 (BPCD 48, S. Epps). Forshaw (1977) and del Hoyo et al. (1997) combined this and the next two species as the Yellow-crowned Parrot, while Stevenson and Anderson (1994) combined the three as Yellow-headed Parrot.

*Yellow-naped Parrot (*Amazona auropalliata*): Native to Central America, primarily the Pacific slope from Mexico to Costa Rica, with a separate population along the Caribbean coast of Honduras and Nicaragua. It is rare outside of captivity in Florida. Small numbers have been seen recently at Fort Lauderdale (Los Olas Isles and the roost), with the high count of 4 on the CBC 16 December 2001. Observed first at the roost 24 July 1999 (BPCD 49, B. Pranty), an adult with a yellow forehead patch and an orange shoulder patch that apparently was either *A. a. parvides* or *caribaea*. An adult and fledgling were observed outside their nest cavity at Los Olas Isles 2 July 2000 (BPCD 50, S. Epps; an adult with a yellow forehead patch but no shoulder patches). The same nest was used again in 2001, but was cut down in 2002. One adult (lacking forehead and shoulder patches) and one juvenile were at Los Olas Isles on the CBC 17 December 2000.

Yellow-crowned Parrot (*Amazona ochrocephala*): Widespread from Panama to Bolivia and central Brazil. Florida reports are limited to the three southeast counties. There are only two Broward County observations, both from Fort Lauderdale: one at the roost 22 February 1975 (Stevenson 1975) and possible breeding observed in July 1988 during the Atlas project (J. Baker).

*Orange-winged Parrot (*Amazona amazonica*): Widespread in South America to southern Brazil. Previous Florida reports were nearly restricted to Miami-Dade County. Orange-winged Parrots have been found recently to be rather common at Fort Lauderdale (Coral Ridge and the roost), Oakland Park, and Wilton Manors. Two others were near Dania 4-5 May 2001 (L. Saul and D. Wassmer in litt.). Individuals were first observed at the roost 10 October 1997, and were verified there 24 July 1999 (BPCD 51, B. Pranty) and 19 July 2000 (BPCD 52, S. Epps). "Dozens" of birds, including "lots" of begging juveniles, were at the roost 23 October 1999 (Pranty 2000b). Other large counts are 63 at the roost 20 February 2000 and 61 at Oakland Park 22 December 1999. A fledgling was outside its nest at "Marina Mile," Fort Lauderdale 6 June 2001 (BPCD 53, S. Epps).

Discussion

Ornithologists were not aware that parrots occurred outside of captivity in Broward County until the early 1970s, but anecdotal information (e.g., Flor 1989b) suggests that some *Amazona* and *Aratinga* species may have first appeared in the early 1950s. Owre (1973) published the first formal account of the exotic avifauna of Palm Beach, Broward, and Miami-Dade counties, but little information was provided for most species. He mentioned only the "Canary-winged" Parakeet and Red-crowned Parrot as occurring in Broward County (Owre 1973). In the early and mid-1970s, observations by Paul Sykes and others of *Amazona* parrots at the Fort Lauderdale roost were published in *American Birds*. During the Florida Breeding Bird Atlas Project (1986-1991), breeding evidence was obtained for 23 parrot species in Florida and seven in Broward County (Kale et al. 1992). Two of these (Monk Parakeet and Red-crowned Parrot) were confirmed to breed, four others (Rose-ringed Parakeet, Black-hooded Parakeet, "Canary-winged" Parakeet, and Yellow-headed Parrot) were considered probable breeders, and the Yellow-crowned Parrot was considered a possible breeder (Kale et al. 1992). Between the 1973-1974 and 1999-2000 Fort Lauderdale CBCs inclusive, a cumulative total of 10 parrot species was reported (mean of 4 species, range 2-7; Bolte 1974-1989, George 1990-2000). During the count-weeks of the December 2000 and December 2001 CBCs, 16 and 17 species, respectively, were found (Table 1).

Owre (1973) compiled a list of 10 species of parrots found outside of captivity in Florida by the early 1970s. This number had increased to 66 species by the early 1990s (Stevenson and Anderson 1994) and 74 by mid-2002 (Pranty 2001a, this paper). The increasing number of parrot species observed at liberty in Florida undoubtedly reflects a combination of increased awareness of exotics, as well as additional species es-

caping or being released. The Fort Lauderdale CBC provides the only long-term dataset for parrots in Broward County, but few species have been observed sufficiently to determine population trends. Moreover, results of the two most recent CBCs (Table 1) suggest that previous efforts may have overlooked species and may have underestimated numbers of individuals of species that were observed. Few observers have been willing to cover heavily developed areas within the count circle, and this has resulted in parrots and other urban species being underreported (W. George in litt.). Nevertheless, data gathered during the CBCs provide most or all the information available in the county for Budgerigar, Orange-fronted Parakeet, and Orange-chinned Parakeet.

The parrot fauna of Broward County contains species from much of their worldwide range, but only those native to the New World (i.e., *Amazona*, *Aratinga*, *Myiopsitta*, and *Nandayus* species) number in the dozens to hundreds of individuals and are breeding regularly. Garrett (1997) found that many of the same species (and even the same subspecies) occurred in southern California. The preponderance of New World parrots seen in the United States may be simply the result of the importation of huge numbers of Neotropical species in recent decades as other countries (e.g., Australia) have banned exportation. Thomsen and Mulliken (1992) estimated that over 1.4 million Neotropical parrots were legally imported into the United States from 1982 to 1988, with nearly half of these obtained from Argentina.

The "Canary-winged" Parakeet presents an interesting challenge for birders and ornithologists (Smith and Smith 1993; Garrett 1993, 1997; Brightsmith 1999; Pranty and Garrett 2002). The American Ornithologists' Union (1997) agreed that the taxon consists of two probably allopatric species, the White-winged Parakeet and Yellow-chevroned Parakeet. Thus, there now are two similar species occurring sympatrically in southern California and southern Florida (Smith and Smith 1993; Garrett 1993, 1997; Brightsmith 1999; Pranty and Garrett 2002). From 1968 to 1972, over 230,000 White-winged Parakeets were imported into the U.S., but subsequent numbers declined to "near zero" (Brightsmith 1999). To compensate for this loss, over 74,000 Yellow-chevroned Parakeets were imported from 1977 to 1990 (Brightsmith 1999). In California, Yellow-chevroned Parakeet clearly is the more numerous *Brotogeris* (Garrett 1993), but the situation in Florida is uncertain (Pranty and Garrett 2002). Up to 200 White-winged Parakeets presently are found at Fort Lauderdale, but it is not known whether these represent one or more recent avicultural releases, or a flock that was overlooked for several years. Furthermore, the two *Brotogeris* species may be hybridizing in the wild. H. Voren (in litt.) purchased 20 *Brotogeris* that reportedly were wild-caught at Fort Lauderdale in January 1999. These individuals, which have bred in

captivity and produced fledglings, show great variation in wing-patch pattern (BPCD 54-68, H. Voren; 15 different individuals). This potentially fascinating discovery warrants additional study and confirmation (cf. Brightsmith 1999).

Opinion on the status of the Red-crowned Parrot in Florida is contradictory. It was considered by Robertson and Woolfenden (1992) to be "Probably unestablished," whereas Stevenson and Anderson (1994) called it "Apparently established" in Broward County. The American Ornithologists' Union regarded the species as "established" in Miami-Dade County (AOU 1983) and in Miami-Dade and Monroe counties (AOU 1998). Both of these *Check-lists* overlooked the population in Broward County, which has always been the largest in the state based on CBC data (Stevenson and Anderson 1994). James (1997, Table 9.2, caption) erroneously reported that Red-crowned Parrots in Florida became extirpated in the 1980s. Because the Florida Ornithological Society Records Committee (FOSRC) uses Robertson and Woolfenden (1992) as its base list, the Red-crowned Parrot presently is considered not established (Bowman 2000, 2001). Robertson and Woolfenden (1992) questioned whether populations in Florida were self-sustaining. Based on numerous observations of dependent young at the Dania and Fort Lauderdale roosts (this paper), we are convinced that the Red-crowned Parrot population in Broward County is being maintained largely if not exclusively through their own reproductive efforts. The FOSRC bylaws (found online at <http://www.fosbirds.org/RecordCommittee/RulesAndProcedures.htm>) suggest that populations of exotic birds should number ". . . a few hundred breeding pairs" to be considered established. Based on current knowledge, numbers of Red-crowned Parrots in southeast Florida do not yet meet this criterion. The status of populations in Miami-Dade and Palm Beach counties are poorly known, although B. Russell (U.S. Fish and Wildlife Service, pers. comm.) observed 160 Red-crowned Parrots at a roost at the Breakers Resort at Palm Beach, Palm Beach County, on 27 December 2000.

The breeding populations of Red-crowned Parrots found in California (Garrett 1997), Florida (e.g., this paper), and Texas (Wiley et al. 1992, AOU 1998) may have *true conservation value* despite their exotic status. From habitat destruction and capture for the pet trade, numbers of Red-crowned Parrots within their limited range in northeast Mexico have plummeted in recent decades. From 1970 to 1982, about 5000 parrots, mostly nestlings, were removed annually to supply the pet trade (Enkerlin-Hoeflich and Hogan 1997). Red-crowned Parrots now are considered an endangered species, with a native population numbering no more than 6500 individuals (Juniper and Parr 1998). Considering the difficulties associated with the use of captive-reared parrots in reintroduction programs (Derrickson and Snyder 1992),

Red-crowned Parrot populations from the United States may provide sources of birds for potential reintroductions into Mexico (Wiley et al. 1992, Garrett 1997), should such an effort be undertaken, and providing that the birds are not genetically compromised.

We believe that the time is long overdue for parrots and other exotic birds in Florida to receive much greater scrutiny by birders and ornithologists, as others have recommended (Robertson and Woolfenden 1992, Smith and Smith 1993, AOU 1998, Brightsmith 1999). Nearly 30 years have elapsed since Owre's (1973) paper was published, documenting the exotic avifauna of southeast Florida in the 1960s and early 1970s. Since that time, many of the parrot species known to Owre have disappeared, and dozens more not found at that time have been observed subsequently, with some of these species now rather common. Shifts in the composition of Florida's parrot fauna presumably reflect changes in species importation into the United States, a situation that has also occurred in southern California (Garrett 1997). Parrots represent the most species-rich family of exotic birds found in the state, with 74 species reported since the 1960s (Pranty 2001a, this paper). Current data on the identity, distribution, and population sizes of parrots are needed especially in Miami-Dade County, the epicenter of Florida's exotic avifauna, with 127 (!) species reported (Pranty 2001a). Only through detailed study and careful documentation can we gain insight into populations of exotic birds found in southeast Florida, and to determine any impacts to wildlife, natural communities, and commercial agriculture.

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NOTES

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AN EARLIER REPORT OF THE EXOTIC NORTHERN CURLY-TAILED LIZARD IN MARTIN COUNTY, FLORIDA

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The Palm Beach County introduction of the exotic northern curly-tailed lizard (*Leiocephalus carinatus armouri*) was reported to have occurred as a result of 20 pairs released in Palm Beach during the 1940s, with an expanded range of approximately 20 city blocks by 1959 (see reviews in Duellman and Schwartz 1958, King 1960, Weigl et al. 1969). By 1968, this population had extended 3.2 km north and 5.6 km south (Weigl et al. 1969). By 1986, the species was common farther south at Woolbright Road and the Intracoastal Waterway in Boynton Beach (Smith and Engeman in press); and later was reported 16 May 1999 at the extreme southern end of Martin County (Hauge and Butterfield 2000), which sits on the northern border of Palm Beach County. A recent survey of this population conducted in September 2002 suggested a minimum north-south range expansion of at least 46.3 km south, and 34.1 km north, beyond the 1968 boundaries (Smith et al. in review).

We here report an earlier finding of northern curly-tailed lizards in Martin County than the May 1999 county record observation. At approximately 12:15 on 12 May 1994, HTS observed a ca. 7-8 cm SVL (snout to vent length) specimen in a parking area at the northeast corner of the intersection of County Line Road and U.S. Highway 1, in Martin County. Three adult lizards (ca. 6-8 cm SVL) were observed at the same location at about 15:30 on 13 May. From 1994 to the present this species has been readily seen at the intersection (HTS pers. obs.). This location is only .3 km south of the site reported by Hauge and Butterfield (2000); however, the observations are 5 years earlier. Not knowing the documented range of the species at the time of these observations in 1994, but knowing the lizard to be abundant regionally (Smith and Engeman in press), HTS previously dismissed these observations because they were thought unremarkable. Our recent interest in this species and subsequent literature review have spurred this report of an earlier finding. We suggest wildlife biologists occasionally review their "ancient" field notes, and share information with colleagues, so that similar data not be unceremoniously overlooked or dismissed.

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DOUBLE-CRESTED CORMORANT ATTEMPTING TO EAT A BIRD

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The Double-crested Cormorant (*Phalacrocorax auritus*) is a common inhabitant of most water bodies in Florida (Hatch and Weseloh 1999). Cormorants are primarily piscivorous (Nettleship and Duffy 1995). While most studies have examined the impact of cormorant predation on fish, other prey items noted include crayfish and salamanders (Derby and Lovvorn 1997), crustaceans (Cairns 1998), and insects (O'Meara et al. 1982). I have found no mention of cormorants consuming birds.

About mid-day on 17 December 2001, while boating on the Crystal River, Citrus County, Florida, I observed a Double-crested Cormorant trying to swallow a bird. The day was sunny, with few clouds and only a slight breeze. The cormorant was east of Buzzard Island at approximately 28°33' 29"N and 82°35' 54"W. When first observed, the cormorant was about 30 m from the boat. Without binoculars it was easy to see that the cormorant was trying to swallow a bird. Through binoculars the prey bird's head appeared to be in the cormorant's gullet, its wings were extended with the bases at the juncture of the cormorant's upper and lower bill. The body was about as long as the cormorant's bill, the tail was "average" in length, and the legs were of moderate length and light in color. The back and top of the tail appeared to be a pearlescent gray, as were the upper wing surfaces. The lower body surfaces were white. The feathers appeared fresh; they did not appear to be waterlogged, suggesting the bird was recently dead. Other observers in the boat, without the aid of binoculars, could see that the cormorant was trying to swallow the bird. The cormorant was not seen to successfully swallow it.

The bird appeared to be some sort of shorebird and most closely resembled a phalarope (*Phalaropus* spp.), Sanderling (*Calidris alba*), or small plover (*Charadrius* spp.) but none fits the description well, and any of these species would have been outside of normal distribution areas. I did not observe how the cormorant came into possession of the bird, whether by capture of a free-ranging individual or consumption of a dead or incapacitated bird.

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A VERIFIABLE WINTER RECORD OF ROSE-BREASTED GROSBEAK IN FLORIDA

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On 5 January 2002, while participating on the Ten Thousand Islands Christmas Bird Count, Linda Douglas, Holly Hamilton, and Kathy O'Reilly-Doyle (KOD) spotted a female *Pheucticus* grosbeak in Collier-Seminole State Park (CSSP), Collier County. Details of the observation were insufficient to identify it as a Rose-breasted Grosbeak (*P. ludovicianus*) or a Black-headed Grosbeak (*P. melanocephalus*). TJD and KOD returned to CSSP several times in January, but could not relocate the bird. On 9 February 2002, during a Naples Bird Club field trip to CSSP, several participants again identified a female *Pheucticus* grosbeak, but the bird slipped away before it could be studied in detail. On 10 February 2002, TJD and Doug Suitor returned to CSSP to relocate the bird. At approximately 11:00 we located the bird, identified it as a female Rose-breasted Grosbeak and obtained several photographs (Fig. 1).

The bird appeared to be loosely associated with a mixed species flock including White-eyed and Blue-headed vireo (*Vireo griseus* and *V. solitarius*), Ruby-crowned Kinglet (*Regulus calendula*), Blue-gray Gnatcatcher (*Polioptila caerulea*), and Yellow-rumped (Myrtle) Warbler (*Dendroica coronata*), birds that were wintering in the tropical hardwood hammock vegetation. The grosbeak tended to stay separate and above the flock and was only mildly interested in the Eastern Screech-Owl (*Otus asio*) tape being played as compared to the rest of the flock. No vocalizations were heard.

The bird was relatively large as compared to the other species with which it was seen. The bill was large, stout, and conical as is typical of this genus. Unlike the Black-headed Grosbeak, the bill was relatively uniform in color and the upper bill relatively pale as shown in the National Geographic Society (1999) and Sibley (2000) field guides. The head and upper parts were relatively dark brown with a whitish throat, supercilium, median crown stripe, and wing bars. The underparts were whitish with a buffy wash and coarse streaking across the breast and down the flanks, as compared to the Black-headed Grosbeak which has finer and less extensive streaking that generally does not extend across the breast (fide Sibley 2000). In addition, the buffy wash was lighter than expected of a first-winter male Rose-breasted or female Black-headed Grosbeak, and there was no hint of red on the breast which first-winter male Rose-breasted Grosbeaks often have (National Geographic Society 1999).

The Rose-breasted Grosbeak winters from central Mexico south to northern South America (AOU 1998). Apparently it is a rare, irregular winter visitor throughout Florida (Robertson and Woolfenden 1992) with approximately 40 unverified reports, including a questionable report for Collier County (Stevenson and Anderson 1994). The Black-headed Grosbeak is also a rare, somewhat irregular winter visitor throughout Florida (Robertson and Woolfenden 1992) with approximately 40 reports, several verified, although none in Collier County (Robertson and Woolfenden 1992, Stevenson and Anderson 1994). It usually winters in Mexico (AOU 1998).

Since the winter of 1992-1993, the last period covered by Stevenson and Anderson (1994), there have been eight additional winter reports and one verifiable winter record, in addition to this one, of Rose-breasted Grosbeak in Florida including: one 5 Dec 1993 at Delray Beach, Palm Beach Co., (B. Hope *in* West et al. 1994); a first winter male 17-25 Feb 1997 in Gainesville, Alachua Co., (M. Hemp and R. Rowan *in* Pranty 1997); a female

Figure 1. Female Rose-breasted Grosbeak at Collier-Seminole State Park, Collier County, Florida, 10 February 2002. This provides the first published, verifiable winter record for the state. Photograph by Terry J. Doyle.

9 Dec 1997 at Ft. Pickens, Escambia Co., (B. Duncan *in* Stedman 1998); an adult male apparently documented but not published 18 Feb-20 Mar 1998 at Sanibel Island, Lee Co., (Dick Konz *in* Pranty 1998, many observers *in* West 1998); one 2 Jan 1999 at Newnans Lake and one 22 Jan-14 Feb 2001 in Gainesville, (C. Reno and I. Fromberg and S. Hellard *in* West and Anderson 1999); an immature male 13 Jan-3 Feb 2001 in Gulf Breeze, Santa Rosa Co. (F. Basset and P. Taylor *in* Cooley 2001); an immature male 21

Feb 2001 in Newport, Franklin Co., (R. Gidden *in* Anderson 2001), and a female 5 Jan 2002 on Merritt Island, Brevard Co., that was photographed on the same day the CSSP bird was first seen (J. Hafizi *in* Anderson 2002).

Acknowledgments.—I thank Linda Douglas, Holly Hamilton, Kathy O'Reilly-Doyle, and members of the Naples Bird Club for their observations; Joe Howard, Kathy O'Reilly-Doyle and Doug Suitor for their company in the field; Bill L. Pranty for his forceful review; and Jerome A. Jackson and two anonymous reviewers for their helpful comments.

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REVIEWS

Florida Field Naturalist 30(4):138-140, 2002.

Guide to the Great Florida Birding Trail, East Section.—Julie A. Brashears and Susan Cerulean, editors. 2002. University Press of Florida, Gainesville, Florida. 188 pages. $19.95 paper. ISBN 0-8130-2561-3.

Watching birds represents the fastest-growing form of outdoor recreation in the United States. The primary goal of the Great Florida Birding Trail is to harness the economic power of nature lovers in hopes of spurring local governments to conserve additional land. The Great Florida Birding Trail is a project of the Florida Fish and Wildlife Conservation Commission and, when completed in 2006, will be a network of sites along a 2000-mile driving route.

For logistical purposes, Florida has been broken into four sections: East, West, Panhandle, and South. The project began with the East Section; books for the other sections are anticipated to be published at 18-month intervals. Sites chosen must meet a set of criteria (not defined in the Guidebook) and must be able to withstand frequent visitor use. The East [really Northeast] Section comprises 18 counties from Nassau County south to Highlands, Okeechobee, and St. Lucie counties, and from the Atlantic Ocean west to Clay, Putnam, Marion, Lake, and Polk counties.

The Guidebook has a soft spine that allows it to lie flat at any page—a nice feature. The layout is pleasing, with good-quality line drawings accenting the text. Twenty-four high-quality maps show the locations of sites within a region. The book has a very wide margin (almost 2.5 inches) on the outside edge of nearly all the pages. Although this may encourage note-taking, readers might have instead preferred a smaller, less expensive book. The Guidebook's size (8 x 10 inches) greatly hinders its portability in the field.

Following the Table of Contents, the book begins with three very short sections. A Preface gives somewhat of an overview about the Birding Trail, and contains the acknowledgments (although names of the site nominators are excluded). The How To Use This Guide section explains just that, and the final section addresses Birding Ethics. Among other topics, the latter section advises readers to "[r]esist the urge to drive your car on the beach, even when it's legal." But ironically, beach-driving by "the more intrepid birders" is mentioned in several of the site accounts that follow! The introductory material is surprisingly brief, especially considering that this book is the first in a series of four. Much of the introductory material presented above was obtained from the Guide's advertising flyer, and not the book itself! Birding guides typically contain information about bird abundance and distribution, habitats, traveling tips and cautions, species accounts of regional "specialties" and tips on how and where to find them, and a bird checklist. None of these topics is addressed in the Birding Trail Guidebook, which suffers greatly from these omissions.

The bulk of the Guidebook consists of the birding sites, which are arranged in "clusters." The East Section contains 135 sites (not 136; back cover) arranged in 23 clusters that each contain between one and 12 sites. Because the clusters are chosen by their proximity, many of them are misleadingly named. As examples, five sites within the Gannet Cluster are located several miles inland (where there are no gannets); the [Lake Wales] Ridge Cluster includes only sites within Polk County—Ridge sites in Highlands County are listed in another cluster; and perhaps most bizarrely, only one of eight sites in the Scrub-Jay Cluster contains Florida Scrub-Jays!

Site accounts are supplemented with up to 14 icons that denote, for instance, whether an entrance fee is charged (although the amount is not specified), whether seasonal hunting occurs, the best times to visit, whether restrooms are provided, etc. Site

accounts contain a description of around 10–15 lines of text each, including a brief description of the site, portions worth visiting, and brief listing of birds to be seen. I was bothered by three aspects of the species listings: (1) they often are rather general, (2) they tend to list the same common and widespread species repetitively, and (3) the seasonality of species occurrence is never indicated, so readers could be excused for thinking that Horned Grebes, Swallow-tailed Kites, and Common Nighthawks, among numerous other species, occur in Florida year-round. Following the Description are directions to the site, usually of a few lines each. These allow the reader to find the site via public roadways, but information on where to go *within* the site often is lacking. The accounts conclude with the hours that the site is open, a telephone number, and an often general website address. Best months to visit also are indicated; these tend to be yearround ("January-December") or from fall through spring. Migration is presented often in the text as occurring in "October and again in April," which implies incorrectly that migration occurs solely in those two months.

Separating the site clusters are 26 short essays that relate mostly to "specialty" birds of the region. These were written by several Florida ornithologists and include essays on Whooping Cranes (Steve Nesbitt), Swallow-tailed Kites (Ken Meyer), Crested Caracaras (Joan Morrison), Least Terns (Jeff Gore), Florida Scrub-Jays (Reed Bowman and Glen Woolfenden), Florida Grasshopper Sparrows (Paul Gray), and Dusky Seaside Sparrows and Painted Buntings (Jim Cox). Other topics address timely conservation issues such as prescribed burning (Todd Engstrom), human and dog disturbance of shorebirds and larids (Nancy Douglass), mortality of Neotropical migrants from communication towers (Jim Cox), benefits of shade-grown coffee vs. "sun coffee" (Ann Morrow), and restoration of the Kissimmee River (Paul Gray). Finally, three "Birdwatching 101" essays address the basics of bird identification, selection of binoculars and field guides, and birding by ear. The essays are pleasant, quick reads that add much to the book.

Throughout the book, the English names of birds are typed in lower-case, which is annoying. Capitalization of the English names of birds now is standard practice, and it helps to locate names within the text. A proofreader skilled in current avian nomenclature would have caught the non-standard names and spellings that occur frequently throughout the text. I noticed several other types of errors: Yellow-bellied Sapsuckers are presented as being permanent residents (p. 52), American Bitterns are called "prolific" and are implied to breed in Florida (pp. 59 and 114), American Redstarts are inferred to be something other than wood-warblers (p. 81), vultures are presented as being raptors (p. 123), Least Terns are claimed to be winter residents (p. 126), Anhingas are called wading birds (p. 125), and "petrels" should be "storm-petrels" (p. 155). Rough-legged Hawks reportedly have occurred at Emeralda Marsh and Sunnyhill Restoration Area (p. 25)—if so, the sightings are not known to the Florida Ornithological Society Records and Field Observations committees. The Guidebook recommends watching for Red-throated Loons in central Brevard County during winter (p. 147), an exercise that may require considerable patience. Cruickshank (1980. *The Birds of Brevard County, Florida*. Florida Press, Orlando) referred to Red-throated Loons as "a rare and irregular winter visitant . . . that may go unrecorded for an entire year."

The closing material consists of several helpful sections. A four-page Resources for Birdwatchers includes brief and incomplete listings of Florida conservation organizations, recommended field guides, checklists, other publications, and telephone numbers for Rare Bird Alerts. Among the critical omissions from this section are Robertson and Woolfenden (1992. *Florida Bird Species: An Annotated List*. Special Publication No. 6. Florida Ornithological Society, Gainesville), Stevenson and Anderson (1994, *The Birdlife of Florida*. University Press of Florida, Gainesville), and Sibley (2000, *The Sibley Guide to Birds*. Alfred A. Knopf, New York). The Sibley Guide likewise is not mentioned in the essay on available field guides, a startling omission. Following the Resources section is an Index Chart that lists all 135 sites together with symbols that indicate if two criteria

(i.e., educational; good for beginners) are met, as well as whether 13 species or groups are found onsite. The birds are presently in seemingly random order (i.e., neither taxonomic nor alphabetical), and the headings on p. 186 are severely mangled, with many headings missing. The symbols that indicate bird presence are incomplete for most or perhaps all species or groups. The book lacks an Index, which represents another flaw.

The Guidebook seems specifically geared to bird-watchers and beginning birders, who have the most to gain from this project. In contrast, serious birders will be disappointed by the inclusion of many less-than-worthwhile birding sites, and the exclusion of information on how and where to find particular sought-after species. Local Audubon chapters and community libraries certainly should have copies of the Guidebook available. Businesses near some of the sites may benefit from purchasing one or more "display copies" to increase awareness of the Birding Trail and its purposes. Museum and university libraries probably can do without this guide.

Finally, most of the information in the *Guide to the Great Florida Birding Trail, East Section* is available free of charge from the Birding Trail's website: <http://www.floridabirdingtrail.com>.—**Bill Pranty,** 8515 Village Mill Row, Bayonet Point, Florida 34667-2662, <billpranty@hotmail.com>.

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The Purple Martin.—Robin Doughty and Rob Fergus. 2002. University of Texas Press, Austin. 128 p. ISBN 0-292-71615-X. $19.95.

This slim "gift book" as the publisher describes it is intended for the many backyard Purple Martin (*Progne subis*) enthusiasts of North America. Now nesting almost exclusively in artificial martin houses in backyards throughout much of the eastern U.S. and Canada, Purple Martins have become extremely popular birds with the public. It has been estimated that over a million people have at one time or other installed houses for Purple Martins. This interest in the species has given rise to several organizations and numerous print and electronic newsletters through which martin fans communicate their observations and share tips on how to best care for their martin colonies. Perhaps reflecting the widespread interest in martins by non-biologists, the only available books about martins (J. L. Wade's *What You Should Know About the Purple Martin*, 1966, Trio Manufacturing Co., Griggsville, IL; R. B. Layton's *The Purple Martin*, 1969, Nature Books, Jackson, MS; and D. Stokes et al.'s *Stokes Purple Martin Book: The Complete Guide to Attracting and Housing Purple Martins*, 1997, Little, Brown, New York) have made little effort to present information in a scientifically rigorous way. Instead these books have mostly repeated lore and in some cases inaccurate biology about the birds, and consequently they have been of little use to ornithologists and of dubious use to martin fanciers. Unfortunately, this book continues that tradition.

Doughty and Fergus' book is intended, apparently, to provide both basic information on martin biology and to chronicle the interest in the species by the public. It contains chapters on classification, migration and range, early interest in martins by Native Americans, and life history. The final chapters describe the various societies devoted to martin conservation and propagation, list the martin "landlords of the year" designated by the Purple Martin Conservation Association (individuals who have either had very large martin colonies or developed new methods of managing colonies), and describe the development of the martin-house industry by various manufacturers. Throughout, the discussion is superficial and provides essentially no new information that would be of value to either biologists or non-biologists interested in the species. Given the intense interest of many in developing new methods of managing martin colonies (e.g., enlargement of nesting cavities, starling-proof entrance holes, porch dividers to increase occupancy rates, owl guards) and the voluminous literature reporting these methods and their refinements, there is a clear need for a book that fully describes these developments and evaluates them critically. Doughty and Fergus' book does neither, and their treatment of these techniques is less substantive than in most martin newsletters.

This book's review of scientific information is mediocre. Like many books on birds written for popular audiences, little if any credit is given to scientists who reported many of the results included in the chapters on the martin's biology. Most statements are unreferenced, making it difficult to impossible to get additional information on a topic if someone was interested. For example, the authors include a discussion of martin vocalizations and a table taken almost entirely from a 1984 publication of mine (*Condor* 86:433-442) but with no attribution. There are many other similar examples. This sort of shoddy use of published work would qualify as plagiarism by most definitions (and would send a college student before a disciplinary hearing), and it is surprising that a university press would allow such poor scholarship in one of its books. In addition to inadequate referencing of the peer-reviewed literature, Doughty and Fergus rely too much on non-peer-reviewed newsletters and magazines about martins, especially the *Purple Martin Update*, as (often unattributed) sources. The *Update* is a widely circulated, attractive, quarterly magazine that reports considerable useful information from martin enthusiasts on their experiences, including new ways of improving martin nesting houses and the birds' success. But it is not peer-reviewed, and much of what it contains

is of dubious scientific value. Doughty and Fergus seem to treat the *Update* as gospel and do not critically evaluate material published there or elsewhere. For example, they repeat an unsubstantiated tale from the *Nature Society News* about a family of martins wintering in Kansas as apparent fact. Such an event would be extremely unlikely and would require convincing documentation. This is the sort of information that often shows up in newsletters but would require critical evaluation by anyone writing a book about martins.

This book is of little use to either scientists or martin enthusiasts, although I suppose it might serve as an introductory primer for someone who knows nothing about martins. While we wait for the definitive book on martins to be written, I recommend sticking to the *Birds of North America* species account (1997, no. 287) for comprehensive information on Purple Martin biology, and for information on the many newly developed management techniques, one still must go through the back issues of the *Purple Martin Update*.—**Charles R. Brown,** Department of Biological Sciences, University of Tulsa, Tulsa, Oklahoma 74104-3189.

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FIELD OBSERVATIONS

Spring report: March-May 2002.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December-February), spring (March-May), summer (June-July), and fall (August-November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers are found at the end of this report. We greatly prefer observations sent via e-mail.

Sight-only observations are considered "reports" while only those supported by verifiable evidence (photographs, video or audio tapes, or specimens) are called "records." Species for which documentation is required by the FOS Records Committee (FOSRC; Bowman 2000, *Fla. Field Nat.* 28:149-160) are marked here with an asterisk (*). A county designation (*in italics*) accompanies the first-time listing of each site in this report. Abbreviations in this report are: CP (county park); EOS (end of season); LARA (Lake Apopka Restoration Area; *Orange*); NWR (national wildlife refuge); PPM (*Polk* phosphate mines); SP (state park); SRA (state recreation area); STF (sewage treatment facility); and N, S, E, W etc., for compass directions. Bold-faced species denote birds newly reported or verified in Florida, or record counts.

Summary of the Spring Season

Sustained light winds from the east for much of the season resulted in a dearth of migrants. Comments received included the following: "the slowest migration I have ever experienced" . . . "migration was almost invisible" . . . "the worst migration we have ever had" . . . "an almost birdless migration" . . . and "What spring migration?" In the W Panhandle, steady winds from the south and southeast allowed migrants to fly inland, resulting in no fallouts along the coast. On the other hand, despite the weather—or perhaps because of it?—it was an excellent spring for Caribbean strays, with 13 individuals of 6 species. Species requiring FOSRC review were the White-faced Ibis at Lakeland, Iceland Gull at Pompano Beach, Elegant Tern in Hillsborough Bay, Zenaida Dove at Key Largo, Key West Quail-Dove at Biscayne National Park, Tropical Kingbird at St. Marks NWR, Cassin's Kingbird at Lake Apopka, Yellow-faced Grassquit at Dry Tortugas National Park, Harris's Sparrow at Fort Walton Beach, and Common Redpoll at Land O' Lakes. "First" successful breeding records of Whooping Crane and Elegant Tern added further interest. Finally, Gail Menk is retiring after compiling reports from the Tallahassee area since 1995; we thank him for his dedication to the FOC.

Species Accounts

For the second year in a row, Ken and Linda Tracey et al. conducted a stationary survey of Neotropical migrants at Green Key Road, New Port Richey (*Pasco*). This year, surveys were conducted every day 3 Mar-15 May, from 0630-0830 hours. During this period they tallied 5750 birds, including 200 Barn Swallows, 207 Prairie Warblers, 676 Palm Warblers, 98 American Redstarts, and 4033 unidentified warblers. No large fall-outs were noted; the three highest counts were of 342, 263, and 198 birds, on 24 Apr, 7 Apr, and 30 Mar, respectively.

Red-throated Loon: 1 molting bird at *Hamilton* phosphate mines 20-27 Apr (B. Bergstrom).

Pacific Loon: 1 at Pensacola Beach (*Escambia*) 18 May (B. and L. Duncan, details to FOC).

PIED-BILLED GREBE: 1 adult with 3 young at PPM 20 Mar (A. Paul).

EARED GREBE: 16 at PPM 18 Mar, and 1 there 17 Apr (P. Fellers); 1 in breeding plumage at *Hamilton* phosphate mines 20-27 Apr (B. Bergstrom).

SOOTY SHEARWATER: 1 inside the surf line off Fort Pickens, Gulf Islands National Seashore (*Escambia*) 9 Apr (L. Duncan, L. Dougherty).

AUDUBON'S SHEARWATER: 120+, mostly near Cosgrove Shoal (*Monroe*) 3 May (D. Goodwin, G. Stoccardo et al.).

BAND-RUMPED STORM-PETREL: 1 landed aboard a fishing boat 40 km S of Pensacola Pass (*Escambia*) 27 May was taken to a rehabilitation center (D. Kaufmann).

WHITE-TAILED TROPICBIRD: 1 immature at Dry Tortugas NP (*Monroe*) 4 May (D. Goodwin, G. Stoccardo et al.).

MASKED BOOBY: a high of 32 birds, including one large chick, at Hospital Key, Dry Tortugas NP in Apr (P. Lehman et al.).

BROWN BOOBY: 65 at Dry Tortugas NP 22 Apr (M. Gardler).

AMERICAN WHITE PELICAN: 1220 at LARA 3 Apr (H. Robinson); 1 at Lake Edna, Mile Marker 58 (*Monroe*) 18 Apr (P. Lehman et al.); 5 at Phipps Nature Preserve (*Franklin*) 5 May (G. Sprandel); 328 at Lake Monroe Conservation Area (*Seminole* and *Volusia*) 11 May (R. Grimshaw); 1 at Newnans Lake (*Alachua*) 11 May (R. Rowan); 350+ at Lake Jessup (*Seminole*) 15 May (R. Grimshaw et al.); 4 at Pine Island (*Hernando*) 23 May (C. Black).

BROWN PELICAN: 2 at Lakeland (*Polk*) 8 Mar (T. Palmer); 1 at LARA 10 Mar (H. Robinson); 3 at Newnans Lake 15 Apr (M. Meisenburg); 1 immature at Lake Istokpoga (*Highlands*) 8 May (M. McMillian); 2 at Lake Jackson (*Leon*) 27 May (G. Sprandel).

DOUBLE-CRESTED CORMORANT: 1 at LARA 10-14 Apr with "quite limited and sparse but extremely obvious" short, straight, white plumes on the head may have been the W race *P.a. albocillatus* (H. Robinson); 1950 at *Hamilton* phosphate mines 11 May (J. Krummrich).

ANHINGA: 1250 at *Hamilton* phosphate mines 11 May (J. Krummrich).

YELLOW-CROWNED NIGHT-HERON: 4 (1 adult and 3 immatures) at Emeralda Marsh Conservation Area (*Lake*) 4 May (J. Puschock).

WHITE × SCARLET IBIS: 1 pink bird at Lakes Park, Fort Myers (*Lee*) 26 Apr (J. Bouton).

GLOSSY IBIS: 1 at Boca Chica Key (*Monroe*) 18 Apr (P. Lehman et al.).

*WHITE-FACED IBIS: 1 at Lake Hollingsworth, Lakeland 28 Mar-6 May (K. Radamaker et al., photos to FOC).

SACRED IBIS: 4 at Dump Marsh, Homestead (*Miami-Dade*) 23 Mar (J. Boyd et al.) were thought to be free-flying birds from Miami MetroZoo.

ROSEATE SPOONBILL: 10 at PPM 18 Mar (P. Fellers); 14 (6 adults) at Lake Hancock (*Polk*) 28 Apr-mid-May (T. Palmer); 4 immatures at Emeralda Marsh 4 May (J. Puschock).

WOOD STORK: 1240 nests at Corkscrew Swamp Sanctuary (*Collier*) produced 3600 fledglings, the largest number since 1976 (*fide* R. Paul).

BLACK VULTURE: 1 nest at Seminole (*Pinellas*) 22 Apr fledged 1 young 27 Jun (J. Fisher).

GREATER FLAMINGO: 2 at Snake Bight, Everglades NP (*Monroe*) 12 and 18 Apr (M. Gardler).

BLACK-BELLIED WHISTLING-DUCK: 3 *Alachua* reports: 8 at Gainesville 9 Mar, 5 at Newnans Lake 14 May, and 4 at Paynes Prairie Preserve SP 28 May (all J. Hintermister); 12 at PPM 10 Mar (P. Timmer); 33 at Bartow (*Polk*) 18 Mar (P. Fellers); 35 at Lake Hancock 28 Apr (T. Palmer).

SNOW GOOSE: 3 (2 blue and 1 white) at Lake Jackson to 9 Mar (G. Menk).

CANADA GOOSE: 1 presumed exotic at Brandon (*Hillsborough*) 14 Apr-late May (B. Pranty, H. Lovell, D. Powell) was pursuing a female Muscovy Duck when seen last!

BLUE-WINGED TEAL: 4 at Newnans Lake 28 May (D. Simpson, J. Hintermister et al.); 2 at St. Marks NWR (*Wakulla*) 29 May-EOS (D. Simpson et al.).

GADWALL: 16 at PPM 18 Mar (P. Fellers).

Redhead: 3 at Holiday (*Pasco*) 13 May (K. and L. Tracey); 2 (female and male) at St. Marks NWR 29 May-EOS (D. Simpson et al.).

Ring-necked Duck: 2 (female and male) at Newnans Lake 28 May (J. Hintermister, R. Rowan et al.).

Greater Scaup: 1 at Seminole 13-16 Mar (J. Fisher); up to 2 at LARA 27 Mar-7 Apr (H. Robinson).

Lesser Scaup: 1 female at E.G. Simmons Park, Ruskin (*Hillsborough*) 25 May (E. Kwater); 1 at LARA to 27 May (H. Robinson); 1 female and 1 male remained at Springhill Road STF, Tallahassee (*Leon*) to 16 Jun (G. Menk).

Long-tailed Duck: 1 at Titusville (*Brevard*) to 3 Mar (T. Ramsey, photo to FOC).

Bufflehead: 1 male at *Hamilton* phosphate mines 27 Apr (B. Bergstrom).

Red-breasted Merganser: 1500 at Fort Pickens (*Santa Rosa*) 11 Mar (K. McMullen).

Ruddy Duck: 1 at LARA to 27 May (H. Robinson).

Osprey: 1 melanistic bird at Chokoloskee Pass (*Monroe*) throughout the season (S. Nesbitt, J. McNichols, photo to FOC) was thought to be the same individual observed by others, 1994-1997 (Clark 1998. First North American record of a melanistic Osprey. *Wilson Bulletin* 110: 289-290).

Swallow-tailed Kite: a nest in *Broward* active by 31 Mar fledged 2 young 6 Jun (J. Harris, W. George et al.) and established the county's first breeding report.

White-tailed Kite: 4 pairs nested at Kissimmee Prairie Preserve SP (*Okeechobee*) in May (C. Tucker, P. Small et al.).

Snail Kite: 1 banded immature male at Lake Istokpoga 5 May (M. McMillian).

Bald Eagle: 20 at Lake Monroe Conservation Area (*Seminole*) 9 Mar (L. Malo et al.); 20 at LARA 3 Apr (H. Robinson).

Cooper's Hawk: an active nest at Lake Seminole Park (*Pinellas*) 9 Apr later was abandoned after a fire (J. Fisher); *Broward's* first breeding report was obtained when an adult was observed on a nest at SE Fort Lauderdale 28 Apr, but the nest was abandoned after 3 weeks (A. and M. Stickle, T. Hendrickson); 1 active nest at St. Sebastian River State Buffer Preserve (*Brevard*) 11 May (D. Simpson).

Short-tailed Hawk: 2 light morphs at Saddle Creek CP (*Polk*) 7 Mar (B. Ahern); 1 dark morph in NE *Osceola* 23 Mar and 1 light morph there 3 Apr (D. Freeman, J. Clifton); 1 light morph at Lakes Park, Fort Myers (*Lee*) 26 Apr (J. Bouton); 2 dark morphs at last year's nest-site, New Port Richey 28 Apr were not seen again (K. Tracey); the radiotagged nestling from the 2001 New Port Richey nest was over Cross Bar Ranch Wellfield (*Pasco*) 8 May (G. Zimmerman *fide* K. Tracey); 1 dark morph E of Dundee (*Polk*) 12 May (B. and L. Cooper); 1 dark morph along Canoe Creek Road (*Osceola*) 15 May (D. Freeman, J. Clifton).

Swainson's Hawk: 1 intermediate morph adult at *Hamilton* phosphate mines 12 Apr (B. Bergstrom).

Crested Caracara: 2 copulated at Lake Monroe Conservation Area 11 May (L. Malo).

Ring-necked Pheasant: 1 at LARA 7-23 May (H. Robinson).

Chukar: 1 at Lakeland 30 May-EOS (J. Rudd, photo to FOC).

Virginia Rail: 2 at Shark Valley 31 Mar (J. Boyd); 1 at Wakodahatchee Wetlands to 7 Apr (B. Hope); 1 at Loxahatchee NWR 13 Apr (B. Hope).

Purple Gallinule: singles in *Pinellas* at Seminole 21 Apr and Bonner Park 23-24 May (J. Fisher).

Purple Swamphen: 1 gray-headed adult W of Carnestown (*Collier*) 10-13 Apr reportedly had been present about six months; it was not seen again (D. Powell, T. Doyle, H. Lovell, and B. Pranty, video to FOC).

Whooping Crane: a pair at Leesburg (*Lake*) laid two eggs by mid-Feb, which hatched 12 and 14 Mar. Incredibly, the second chick was killed by a Bald Eagle hours after hatching, and the eagle itself later was injured (requiring rehabilitation!) when it was attacked by the parent cranes as it tried to capture the first chick. The surviving chick

made its first flight on 7 Jun, becoming the first Whooping Crane to successfully fledge in the wild in the United States in 63 years—and the first known fledgling in Florida (*<http://floridaconservation.org/whatsnew/whoopermilestone-st.html>*).

SEMIPALMATED PLOVER: 134 at LARA 15 May, and 63 there 23 May (H. Robinson); 2 at Springhill Road STF 31 May (G. Menk).

PIPING PLOVER: 4 at Crandon Beach, Key Biscayne (*Miami-Dade*) 3 May (R. Diaz); 1 at LARA 20 May (H. Robinson).

AMERICAN OYSTERCATCHER: 1 at Pensacola Beach 18 Apr (M. and R. Rose).

BLACK-NECKED STILT: 1 at Springhill Road STF 26 Apr, and 2 there 30-31 May (G. Menk); 139 at *Hamilton* phosphate mines 11 May (J. Krummrich).

AMERICAN AVOCET: 2 at LARA 27 May (H. Robinson).

SOLITARY SANDPIPER: 1 at LARA 19 Mar (H. Robinson).

WILLET: 4 at LARA 24 Apr (H. Robinson).

SPOTTED SANDPIPER: 13 at LARA 15 May (H. Robinson).

UPLAND SANDPIPER: 1 at Kissimmee Prairie Preserve SP 22 Apr (P. Small).

MARBLED GODWIT: 3 at Bald Point SP (*Franklin*) 11 May (G. Sprandel).

RUDDY TURNSTONE: 8 at LARA 6 May (H. Robinson); 8 at *Hamilton* phosphate mines 11 May (J. Krummrich).

RED KNOT: 2 in winter plumage at Ohio Key (*Monroe*) 22 Apr (P. Lehman et al.); 1 at LARA 15 May (H. Robinson).

SANDERLING: 4 at LARA 6 May, and 5 there 20 May (H. Robinson); 2 at *Hamilton* phosphate mines 11 May (J. Krummrich).

SEMIPALMATED SANDPIPER: 1540 at LARA 23 May (H. Robinson).

WHITE-RUMPED SANDPIPER: 3 at *Hamilton* phosphate mines 11 May (J. Krummrich); 37 at LARA 23 May (H. Robinson); 3 at Newnans Lake 28 May (R. Rowan, J. Hintermister et al.); 1 at St. Marks NWR 29 May (D. Simpson); "about a dozen" at Homestead (*Miami-Dade*) 30 May (L. Manfredi).

PECTORAL SANDPIPER: 1 at Springhill Road STF 4 Mar (D. and S. Jue); 1 at Lake Jackson 5 Mar (G. Menk).

DUNLIN: 1 at *Hamilton* phosphate mines 11 May (J. Krummrich).

CURLEW SANDPIPER: 1 in breeding plumage at LARA 6 May (H. Robinson).

STILT SANDPIPER: 111 at LARA 9 May (H. Robinson), and 68 there 11 May (G. Stoccardo, J. Peterson); 55 at *Hamilton* phosphate mines 11 May (J. Krummrich).

AMERICAN WOODCOCK: 1 male displayed at Weekiwachee Preserve (*Hernando*) through 9 Mar (A. and B. Hansen).

RED-NECKED PHALAROPE: 3 at *Hamilton* phosphate mines 11 May (J. Krummrich).

POMARINE JAEGER: at least 6 light morphs at Dry Tortugas 14 and 22 Apr (M. Gardler).

LONG-TAILED JAEGER: 1 light morph adult off Miami (*Miami-Dade*) 5 May (P. Bithorn, details to FOC).

HERRING GULL: 1 at LARA 27 May (H. Robinson).

*ICELAND GULL: 1 first-winter bird at Pompano Beach Landfill (*Broward*) 2-9 Mar (M. Berney, W. George et al.).

LESSER BLACK-BACKED GULL: 1 first-year bird at St. Marks NWR 21 Mar (J. Cavanagh); 2 adults at Crandon Beach to 9 May (R. Diaz) furnished the first published spring report for *Miami-Dade*.

GLAUCOUS GULL: 1 first-year bird at St. George Island (*Franklin*) 9 Apr (J. Dozier).

GREAT BLACK-BACKED GULL: 1 at Crandon Beach 9 May (R. Diaz).

GULL-BILLED TERN: 10 at PPM 17 Apr (P. Fellers); 1 at LARA 21 Apr-15 May (H. Robinson); 1 at *Hamilton* phosphate mines 16 May (J. Krummrich); 5 at St. Marks NWR 29 May (D. Simpson).

CASPIAN TERN: 727 at PPM 18 Mar (P. Fellers).

ROYAL TERN: 12 at PPM 18 Mar (P. Fellers); 1 at Hague Dairy (*Alachua*) 5 May (M. Manetz, R. Rowan); 1 at LARA 9-12 May (H. Robinson).

*Elegant Tern: 1 adult (male?) at Island 3D, Hillsborough Bay (*Hillsborough*) 23-24 May was photographed brooding an egg (R. Paul, B. Pranty, D. Powell et al., photos and videos to FOC).

Roseate Tern: 200 in the Florida Straits (*Monroe*) 22 Apr (M. Gardler).

Common Tern: 1 at LARA to 20 May (H. Robinson).

Arctic Tern: 2 at LARA 23 May (H. Robinson).

Least Tern: 56 were nesting on an Auburndale (*Polk*) rooftop 6 May (T. Palmer).

Black Noddy: 1 at Dry Tortugas NP 14 Apr-EOS (M. Gardler et al., photos to FOC by G. O'Brien).

Black Skimmer: 64 at Lake Mirror (*Polk*) 9 Mar (T. Palmer); 1 at *Hamilton* phosphate mines 16 May (J. Krummrich); 9 at LARA 27 May (H. Robinson).

Ringed Turtle-Dove: 1 at LARA 9 May (H. Robinson).

White-winged Dove: 2 at Archer (*Alachua*) 6-28 Mar (M. Meisenburg); 2 at Brooksville (*Hernando*) 1-28 May (S. Dingfelder); 2 at T. M. Goodwin Waterfowl Management Area (*Brevard*) 11 May (D. Simpson, A. Bankert); 1 male at Little Talbot Island SP (*Duval*) 14 May (P. Sykes, J. Seginak).

*Zenaida Dove: 1 at Key Largo (*Monroe*) 3-6 May (L. Manfredi et al., photos to FOC by D. Powell and J. Puschock).

Common Ground-Dove: 34 at PPM 21 Apr (P. Timmer, C. Geanangel).

*Key West Quail-Dove: 1 at Elliott Key, Biscayne NP (*Miami-Dade*) 9-26 May (B. Roberts, D. Olle) reportedly had been present for some time previously.

Cockatiel: 1 at W Kendall 25 Apr (J. Boyd).

Black-hooded Parakeet: 2 at a nest at Fort De Soto CP (*Pinellas*) 20 Apr (S. Riffe et al.).

White-fronted Parrot: 4 at Matheson Hammock (*Miami-Dade*) 5 May (J. Boyd et al.).

Yellow-billed Cuckoo: 6 called on the Pinecrest BBS route along Loop Road (*Monroe*) 30 May (T. Doyle).

Mangrove Cuckoo: 29 at 101 point counts in and adjacent to Ten Thousand Islands NWR (*Collier*) 4 May-3 Jun. Previous surveys totaled 24 cuckoos at 101 points in 2001, and 64 at 88 points in 2000 (T. Doyle).

Smooth-billed Ani: 4 (in 2 groups) at Stormwater Treatment Area 1-W (*Palm Beach*) 27 Mar (B. Wagner).

Barn Owl: 1 at Honeymoon Island SRA (*Pinellas*) 15 Mar (W. Yusek); 1 found dead on the road at Bahia Honda (*Monroe*) 22 Apr (P. Lehman et al.).

Great Horned Owl: at least 4 of 7 pairs that nested on power poles at PPM produced young (P. Fellers).

Short-eared Owl: up to 2 at Garden Key, Dry Tortugas NP 11-25 Apr (P. Bithorn, M. Gardler et al.) and 1 at Loggerhead Key, Dry Tortugas NP 11-23 Apr (P. Bithorn et al.).

Whip-poor-will: singles sang in N *St. Johns* 17 Mar (P. Powell) and at Fort George Island (*Duval*) 17-19 Mar (C. Clark).

Chimney Swift: 1 at Green Key, New Port Richey (*Pasco*) 20 Mar, and 83 at a nearby chimney roost 1 Apr (K. Tracey).

Black-chinned Hummingbird: 1 at Gainesville to 30 Mar (S. Bynum).

Rufous Hummingbird: 1 banded female at Tallahassee to 29 Mar (F. Rutkovsky).

Selasphorus species: 1 male at Eastpoint (*Franklin*) 26-28 Mar (S. Klink).

Red-headed Woodpecker: 1 at Fort De Soto CP 20 Apr (S. Lockwood et al.).

Hairy Woodpecker: 4 at Yucca Pens Unit, Babcock-Webb WMA (*Charlotte*) 15 Mar (J. Bouton).

Eastern Wood-Pewee: 2 at Sanibel Lighthouse (*Lee*) 19 May (V. McGrath).

Least Flycatcher: 1 at Frog Pond WMA (*Miami-Dade*) to 22 Apr (P. Lehman et al.).

Vermilion Flycatcher: 2 at LARA 4 Mar, and 1 there to 6 Mar (H. Robinson).

Ash-throated Flycatcher: 1 at Emeralda Marsh to 10 Mar (J. Puschock); 1 along Government Road (*Hendry*) 16 Mar (T. Doyle); 1 at Ocala National Forest (*Marion*) 19-25 Mar (J. Puschock); 1 at LARA to 17 Apr (H. Robinson).

Brown-crested Flycatcher: 1 at Frog Pond WMA 30 Apr (R. Diaz).

La Sagra's Flycatcher: 1 at Delray Beach (*Palm Beach*) to 21 Mar (B. Hope et al., photos to FOC by J. Lehman); 1 at Spanish River Park (*Palm Beach*) 6 Apr (B. and J. Hope); 1 at Matheson Hammock (*Miami-Dade*) 6 Apr (R. Diaz, P. Bithorn et al.); 1 heard only at Elliott Key 26 May (D. Olle, D. Lysinger).

*Tropical Kingbird: 1 at St. Marks NWR to 19 Apr (G. Menk, J. Murphy et al.).

*Cassin's Kingbird: 1 at LARA to 3 Apr (H. Robinson).

Western Kingbird: 3 at East Lake Weir (*Marion*) 4-26 Mar (R. Rowan, E. Scales); 34 at LARA 10 Apr, 25 there 17 Apr, and 1 there to 9 May (H. Robinson); 1 near Lake Istokpoga 8 May (M. McMillian).

Eastern Kingbird: 1 late migrant at Bonner Park, Largo 27 May (J. Fisher).

Gray Kingbird: singles at LARA 27-31 Mar and 15 May (H. Robinson); 1 at Green Key 28 Mar (K. Tracey); 1 inland at T. M. Goodwin Waterfowl Management Area 11 May (D. Simpson, A. Bankert); 1 at St. Marks NWR 29 May (D. Simpson); 1 at Buck Island Ranch (*Highlands*) 30 May (M. McMillian, photos to FOC).

Scissor-tailed Flycatcher: 4 at LARA 24 Mar, and 1 there to 6 May (H. Robinson); 1 at St. Johns Water Management Area (*Indian Rover*) 3 Apr (S. Rowe).

Bell's Vireo: 1 at Frog Pond WMA to 23 Apr (*fide* J. Boyd).

Philadelphia Vireo: 1 at Cedar Key (*Levy*) 5 May (D. Henderson); 1 at Kingsley Plantation, Fort George Island (*Duval*) 6 May (P. Sykes).

Florida Scrub-Jay: 2 at the Lust Farm Road gate, LARA 17 Apr (H. Robinson).

Tree Swallow: tens of thousands or more at St. Marks NWR 27-28 Mar (J. Dozier et al.); 1 at Springhill Road STF (*Leon*) 30 May (D. Simpson).

Northern Rough-winged Swallow: 35 at PPM 10 Mar (P. Timmer).

Cliff Swallow: 3 at LARA 20 May (H. Robinson).

Cave Swallow: 1 at Fort Pickens 15 Mar (B. and W. Duncan, details to FOC); 1 "probably" of the West Indian subspecies at Gulf Breeze (*Santa Rosa*) 14 Apr (B. and L. Duncan, details to FOC).

Red-breasted Nuthatch: 1 at Eastpoint 26 Mar-5 Apr (S. Klink).

Golden-crowned Kinglet: 1 at Paynes Prairie Preserve SP 9 Mar (R. Rowan); 1 at Gainesville 9 Mar (J. Holstein, R. Rowan).

Hermit Thrush: 1 at Tallahassee 15 Apr (D. and S. Jue).

Wood Thrush: 1 at Hugh Taylor Birch SP (*Broward*) 2 Apr probably was the one that wintered (W. George); 1 at A. D. Barnes Park (*Miami-Dade*) 7 Apr (J. Boyd et al.).

American Robin: 1 at St. Marks NWR 29 May (D. Simpson).

Brown Thrasher: 1 at Dry Tortugas NP 19-20 Apr ff (P. Lehman et al.).

Common Myna: adults were building a nest at Sanford (*Seminole*) 24 Mar (M. Wilson, photos to FOC); a nest at Kendall contained 3 nestlings 31 May (J. Boyd, photos to FOC).

Nashville Warbler: 1 at High Springs (*Alachua*) 10 Apr (D. Robbins).

Northern Parula: an apparent family group along the Loxahatchee River, Jupiter 27 May (C. Weber) seems to be the first *Palm Beach* breeding report; 6 singing males on the Pinecrest BBS route (2 in *Collier* and 4 in *Monroe*) 30 May (T. Doyle).

Chestnut-sided Warbler: 1 at Gainesville 19 May (A. Kratter).

Magnolia Warbler: 2 males (1 sang) at Sanibel Lighthouse 19 May (V. McGrath).

Yellow-rumped Warbler: 1210 at LARA 6 Mar (H. Robinson).

Blackburnian Warbler: 1 at LARA 20 May (H. Robinson).

Prairie Warbler: 2 at Tallahassee 16 Mar (R. Lengacher); 1 at Black Swamp (*Leon*) 16 Mar (G. Menk, M. Evans).

Blackpoll Warbler: 18 at LARA 1 May (H. Robinson).

Prothonotary Warbler: 2 on the Pinecrest BBS route along Loop Road (*Collier* and *Monroe*) 30 May (T. Doyle).

Swainson's Warbler: 7 in mid-*Pinellas* variously 31 Mar-25 Apr (J. Fisher); 1 at Birch SP 2 Apr (W. George); 1 at O'Leno SP (*Columbia*) 11 Apr (D. Robbins); 1 at Dry Tor-

tugas NP 19 Apr (P. Lehman et al.); 1 sang on territory at Steinhatchee Springs WMA (*Lafayette*) 6 May (J. Hintermister et al.); 1 at Fort George Island 10 May (P. Sykes).

Ovenbird: 1 sang at Tallahassee 24 Apr (J. Cavanagh).

Northern Waterthrush: 1 at St. Augustine (*St. Johns*) 19 May (J. Holstein).

Kentucky Warbler: singles at Largo 1 and 30 Apr (J. Fisher).

Connecticut Warbler: singles at Seminole 11-12 May and Largo 27 May (J. Fisher).

Wilson's Warbler: 1 female at Snake Bight Trail, Everglades NP 9 Mar (J. Boyd); 1 at Emeralda Marsh 10 Mar probably wintered (J. Puschock); 1 male at Frog Pond WMA to 21 Mar (*fide* J. Boyd).

Yellow-breasted Chat: 1 at Bill Baggs/Cape Florida SP (*Miami-Dade*) 5 Apr (R. Diaz); 1 at Frog Pond WMA to 11 Apr (*fide* J. Boyd); 6 at LARA 21 Apr (H. Robinson); 1 sang at O'Leno SP (*Alachua*) 2 May (J. Hintermister); 1 sang at Steinhatchee Springs WMA 6 May (J. Hintermister et al.); 2 on territory at Paynes Prairie Preserve SP 28 May (J. Hintermister et al.).

Bananaquit: 1 immature at Garden Key, Dry Tortugas 29 Apr (L. Manfredi).

Summer Tanager: 1 at a Tallahassee feeder Jan-5 Mar (D. Houle); 1 at Gainesville 15 Mar (R. Rowan).

Western Spindalis: 1 male at Key Largo 21 Apr-5 May (S. Johnson, K. Ellsworth, J. Puschock); 1 female at Crandon Park 26-27 Apr (R. Diaz et al.); 1 male at Spanish River Park 27-28 Apr (B. Hope, M. Reid et al.); 1 black-backed male at Bill Baggs/ Cape Florida SP 6 May (R. Diaz); 1 female in Boca Raton 10 May (B. Hope).

*Yellow-faced Grassquit: 1 male sang at Dry Tortugas NP 2-4 May (A. Binns, D. Goodwin, G. Stoccardo et al.).

Clay-colored Sparrow: 1 at Apopka (*Orange*) 6 Mar (M. Gardler, J. Gaetzi); 2 at LARA to 14 Apr (H. Robinson); 2 at Frog Pond WMA to 20 Apr (P. Bithorn, J. Boyd et al.); 1 at Honeymoon Island SRA 4 May (W. Yusek).

Field Sparrow: 16 at Apopka 6 Mar (M. Gardler, J. Gaetzi); 12 at LARA 14 Mar (H. Robinson).

Grasshopper Sparrow: 1 sang at Weekiwachee Preserve 9 Mar (A. and B. Hansen).

Nelson's Sharp-tailed Sparrow: 1 sang at Pine Island 29 Apr (A. and B. Hansen).

Henslow's Sparrow: 1 at Tosohatchee State Reserve (*Orange*) 23 Mar (B. Paxson).

Seaside Sparrow: 30 in song within the last 300 m of CR-361 (*Dixie*) 22 Apr (J. Hintermister).

Lincoln's Sparrow: 2 at Paynes Prairie Preserve SP 9 Mar (A. Kratter, R. Rowan); 1 at Frog Pond WMA to 2 Apr (R. Diaz); 1 at Emeralda Marsh to 6 Apr (J. Puschock).

*Harris's Sparrow: 1 adult at Fort Walton Beach STF (*Okaloosa*) 10 Apr (D. Ware, photos to FOC).

White-crowned Sparrow: 22 at Apopka 6 Mar (M. Gardler, J. Gaetzi).

Dark-eyed Junco: 1 at Spring Hill (*Hernando*) 8 Mar (P. Young); 1 at Gainesville 11 Mar-1 Apr (M. Jones).

Northern Cardinal: 209 at LARA 17 Mar (H. Robinson).

Painted Bunting: 1 male at a Tallahassee feeder to 5 Apr (B. Buford); 1 immature male remained at a Jacksonville feeder (*Duval*) to 30 Apr (P. Powell); 9 at LARA 9 May (H. Robinson).

Dickcissel: 2 males sang and drove away Red-winged Blackbirds at Frog Pond WMA 12 Apr-EOS (M. Gardler); 2 at LARA 21 Apr (H. Robinson); 1 at Loggerhead Key, Dry Tortugas NP 23 Apr (M. Gardler); 1 at W Kendall to 25 Apr (J. Boyd).

Bobolink: 7060 at LARA 1 May (H. Robinson).

Yellow-headed Blackbird: 1 at Frog Pond WMA 9 Mar (P. Bithorn et al.).

Shiny Cowbird: 1 male at Eastpoint 31 Mar-5 Apr (S. Klink); 1 male sang at Cedar Key 4 Apr-EOS (D. Henderson); 1 female at Garden Key, Dry Tortugas NP 23 Apr (M. Gardler); 1 male sang at Tampa (*Hillsborough*) 4 May (L. Saul, D. Wassmer); 1 male at Bald Point (*Franklin*) 4 May (J. Dozier); 1 second-year male at Little Talbot Island

SP 14 May, and possibly the same individual 2.4 km away 15 May (P. Sykes, J. Seginak); 1 at Gainesville 31 May (A. Kratter).

Bronzed Cowbird: up to 6 at Tampa 6-22 Mar (L. Saul, D. Wassmer, photos to FOC); 2 (female and male) at Apalachicola (*Franklin*) in mid-Mar (K. McMullen); 2 males at Skyview Country Club, Lakeland to 30 Mar (R. Webb).

Orchard Oriole: 1 at Eastpoint 22 Mar (S. Klink).

House Finch: a nest at Fort Lauderdale hatched 5 eggs 8 Apr (S. Epps); 1 male sang at Lakeland 6 May (B. Snow); 5 elsewhere at Lakeland 25-28 May (M. Chakan).

*Common Redpoll (*Carduelis flammea*): 1 photographed (facing away from the camera) at Land O' Lakes (*Pasco*) 15 Mar (D. Bowman, photos to FOC). The FOSRC did not accept the record, ruling that a *Carpodacus* finch could not be ruled out (R. Bowman in litt.).

Pine Siskin: 1 at Tallahassee 5-6 Mar (D. Houle).

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